VOL. LXXIX PART EIGHT

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

AUGUST 1954

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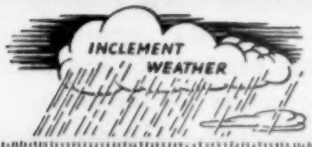

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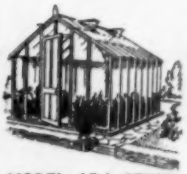

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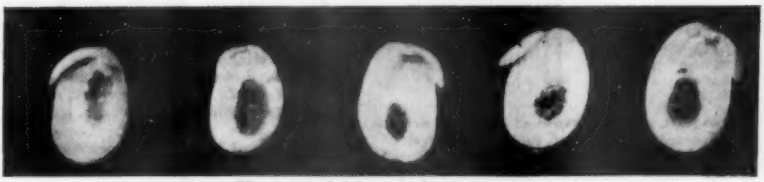

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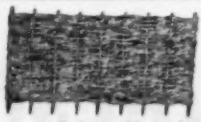

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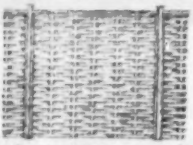

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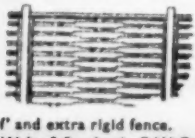

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JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

VOL. LXXIX PART EIGHT

August 1954

THE SECRETARY'S PAGE

ANNOUNCEMENTS—AUGUST AND SEPTEMBER

Shows

TUESDAY, August 10 12 NOON to 6 P.M. WEDNESDAY, August 11 10 A.M. to 5 P.M.	Fortnightly Show. Gladiolus Competition. British Fuchsia Society's Competition.
TUESDAY, August 24 12 NOON to 6 P.M. WEDNESDAY, August 25 10 A.M. to 5 P.M.	Fortnightly Show.
FRIDAY, September 3 1 P.M. to 7.30 P.M. SATURDAY, September 4 10 A.M. to 5 P.M.	National Dahlia Society's Show.
TUESDAY, September 7 12 NOON to 6 P.M. WEDNESDAY, September 8, 10 A.M. to 5 P.M.	Fortnightly Show. Alpine Garden Society's Competition. Cactus and Succulent Society's Competition.
FRIDAY, September 10 11 A.M. to 7 P.M.	National Rose Society's Show.
TUESDAY, September 14 1 P.M. to 7.30 P.M. WEDNESDAY, September 15 10 A.M. to 6 P.M.	National Chrysanthemum Society's Show.

Shows—*continued.*

WEDNESDAY, September 22 11 A.M. to 9 P.M. THURSDAY, September 23 10 A.M. to 9 P.M. FRIDAY, September 24 10 A.M. to 9 P.M. SATURDAY, September 25 10 A.M. to 5 P.M.	GREAT AUTUMN SHOW, at the National Hall, Olympia.
WEDNESDAY, September 29 2.30 P.M. to 6 P.M. THURSDAY, September 30 12 NOON to 5 P.M.	Royal Air Force Horticultural Show.

Lectures

TUESDAY, August 10, at 3 P.M. Masters Memorial Lecture, "The History of Garden Roses," Part I, by MISS A. WYLIE, M.SC.

TUESDAY, September 7, at 3 P.M. Masters Memorial Lecture, "The History of Garden Roses," Part II, by MISS A. WYLIE, M.SC.

Demonstrations—The following demonstrations will be given at Wisley, that on the second day being a repetition of that given on the first.

Vegetable Garden

September 29–30. Digging, Trenching, Manuring and Composting. (Commencing at 2 P.M.)

Chelsea Show—Attention is drawn to the fact that in 1955 the Chelsea Show will be held on May 25, 26 and 27, with a private view for Fellows and Associates on May 24.

The Society's Examinations—The Preliminary Examination for the National Diploma in Horticulture will be held on Saturday, November 27, 1954. The closing date for entry forms is October 1, 1954.

The Naming of Fruit—

1. Fruit for naming may be sent by private individuals to the Society's Gardens at Wisley. Although every effort is made to identify specimens correctly, no guarantee of accuracy can be given.

2. Not more than twelve samples can be accepted from one person at one time.

3. A fee of 1*s.* is charged for each sample, and a remittance should be sent at the same time as the specimens.

4. The following instructions should be observed when sending fruit for identification:—

Send *at least three specimens* of each variety. *The specimens should be typical of the variety, neither bruised nor imperfect, and should have reached maturity, showing characteristic size and colour.*

Number each sample and keep a record of the tree, bush or plant from which it was taken, as fruit cannot be returned. Apples and pears are best numbered in pencil on the skin. Do not use labels as they are liable to become loose in the post. Plums and soft fruit should be securely packed in separate, clearly numbered bags. A sample shoot with foliage of each variety should be sent.

Pack in moss, wood wool or similar material, in a strong box that will not be crushed in the post. Do not use a box that has contained, for example, soap, as the smell masks the characteristic flavour of the fruit.

Give as many details as possible of the soil, the age of the tree, its habit, etc.

Do not post specimens on Friday, or just before a Bank Holiday.

Specimens should be addressed to The Director, The R.H.S. Gardens, Wisley, Ripley, Woking, Surrey.

NOTES FROM WISLEY

J. B. Paton

THE trial grounds during August provide a brilliant splash of colour with the Dahlias, Gladioli and early-flowering Chrysanthemums at their best. The visitor to the Gardens may approach these grounds directly from the main entrance where he may note that the beds fronting the Curator's House have been planted with *Chrysanthemum frutescens* 'Jamaica Primrose' in association with Heliotrope. *C.* 'Jamaica Primrose,' introduced by DR. G. A. C. HERKLOTS from Jamaica, received an Award of Merit after trial last year. Moving up on to the Terrace to the north side of the trial grounds the bedding scheme includes Pelargoniums 'Gustave Emich,' 'Flowers of Spring,' 'Harry Hieover' and 'His Majesty,' and *Heliotrope* 'The Speaker' for ground cover, while as dot plants there are standards of *Pelargonium* 'Gustave Emich' and *Heliotrope* 'Madame de Bussy,' the yellow-foliaged *Abutilon striatum* var. *Thompsonii*, the deep chocolate-leafed *Canna*, the white hairy-stemmed *Calocephalus Brownii*, more usually known as *Leucophyta Brownii*, and the silvery cut-leafed *Centaurea gymnocarpa*.

Entering the Broad Walk from the Terrace it will be noted that the trial of early-flowering Chrysanthemums occupies the prominent position on which for so long Dahlias have reigned supreme. This year the Chrysanthemum trial has been increased in size, each stock being represented by twelve plants in the disbudded section and six plants in the pompon and naturally grown or spray section. On account of the cold nights of April, planting was delayed until May 4, but by mid-June the trial was growing away well and showing every sign of the development of sturdy plants. If they have not made sufficient side shoots the disbudded varieties are stopped once in June and the shoots are later thinned to allow eight to ten flowers per plant.

In the two small borders nearest the Terrace are planted the pompon and spray varieties. Of the older pompons the buttercup yellow *C.* 'Denise' raised by Messrs. J. and T. Johnson of Tibshelf, Derbyshire, and the yellow orange-flushed 'Janté Wells' raised by Messrs. Wells of Merstham, Surrey, can be relied upon to provide a wealth of flower on a compact plant. Of the newer ones the neat dwarf-growing 'Orange Lad' makes an attractive bush on which up to 100 blooms may be seen, while more suitable for cutting is the erect-growing 'Little Dorrit' raised by Messrs. H. Shoesmith of Mayford, Woking. It carries very solid flowers of a bronze-tinged pale phlox-pink colour.

In the spray section two outstanding orange-bronze varieties are Messrs. Johnson's 'Chatsworth' and the orange crimson-flushed 'Scarlet Pimpernel' raised by MR. W. B. JACKSON of Chester. The 'Sweetheart' group is represented both in the spray and disbudded sections. The original rose-pink 'Sweetheart' was another of Messrs. Johnson's raising, while the peach and amber sports occurred at the Colham Green Nurseries, Middlesex.

It is of considerable interest to note that of the 128 stocks planted in 1954 no fewer than 38 of these have been raised by Messrs. Shoesmith and 36 by Messrs. Johnson. These figures amply illustrate how much Chrysanthemum-lovers owe to these two firms for the great strides which have been made in recent years in early-flowering Chrysanthemums. MR. T. JOHNSON commenced growing Chrysanthemums soon after leaving school and one of his first ventures was to buy from the Nottingham market what he believed to be some early-flowering varieties, which unfortunately proved to be late-flowering. In his early days he was closely watching the work of the great French raiser NONIN. MR. SHOESMITH comes of a gardening family, for his father was a very competent grower of exhibition Chrysanthemums at the end of the last century. After working in various private gardens he set up on his own about 1925 and commenced to raise his own strains of early, mid-season and late varieties.

In the disbudded section the whites include the very large-flowered 'White Wings,' the incurving 'Brumus' and the pure white 'Summer Snow.' The pale yellow 'Derby Cream' has attracted much attention in previous years on account of its neat compact habit, which makes it very suitable for garden decoration, a character shared by the deep yellow 'Louie Leach,' which is some 2½ feet high. Taller growing and more suitable for cutting is the canary yellow 'Echo.' Of the pink varieties one of the best is 'New Princess' which is much admired on account of its earliness and the width of its pale pink petals. A slightly deeper shade is the peach-pink 'Peach Blossom,' which exhibitors find useful for the early shows as they do the perfectly incurved silvery-lilac 'John Woolman,' which, however, is somewhat tall for garden decoration. Of the red colours the crimson-scarlet 'Cavalier,' the light red, full reflexed 'Salamander' and the crimson-bronze 'Cotswold Flame' are all meritorious plants for the garden.

Reaching the top of the Chrysanthemum Trial and turning to the left the Dahlia Trial is planted to the south and the Gladiolus Trial to the north. It may be noted that the plants in the Gladiolus Trial are in large measure the result of hybridization work undertaken in Holland with a few Canadian, American, Australian and German raised varieties. The trial was planted on April 9, and grew away well in spite of the cold weather of May. To control possible attacks of *Taeniothrips simplex*, the Gladiolus Thrip, a spray of 5 per cent. B.H.C. emulsion was given when the plants were 6 inches high and subsequently at three-weekly intervals. This pest, introduced from America in 1950, causes white spotting on the flowers and in severe cases the flowers fail to open. As a further measure of control the corms may be dusted when in their frost-proof store during the winter. The dust should consist of 5 per cent. D.D.T. powder combined with a copper lime dust to control green mould, *Penicillium gladioli*, and also *Botrytis* sp.

In the pure white stocks, *Gladiolus* 'Snowflake' and 'Paloma Blanca' are two which have been introduced by Messrs. Konynenberg & Mark for the house of Pfitzer, who for over a quarter of a century have raised many of the finest white Gladioli. The former has large round flowers, six or eight opening at one time on a stem of medium height, while the latter produces its substantial blooms very early, on a tall stem. In the pale cream shades the mid-season 'Leif Erikson' may have up to twelve sulphur-cream, slightly ruffled flowers open at once; very similar in colour is 'Alexander Brailowsky' but with a greenish tinge to the opening buds. Two cream varieties with markings in the throat of the flower are 'Richard Crooks' and 'Schwabenperle.' The former has creamy-white, pink-tinged, outer petals with a scarlet blotch on the deeper yellow lower petals while the latter is flushed with vermilion and has a blotch of greenish cream in the throat. Messrs. P. Visser have included in their sendings to the trial three yellows—'Hollandia,' 'Diamond' and 'Golden Wings.' The first is a clear mimosa-yellow and the other two are in shades of barium-yellow. A 1953 introduction, 'Adorable,' has the sulphur-cream petals blotched at the throat with amber-cream. The slightly ruffled flowers, twenty or more of them, are carried on a strong stem and in the bud stages have a greenish sheen. Raised in Australia by BOTH and sent by Messrs. Laidlaw, the pale primrose 'Tunias Challenge' has blooms of immense size, which if the summer is wet are not seen to their best advantage. However, the smaller-sized flowers of 'Ares' should not suffer so readily. The amber-white, pink-flushed petals are slightly ruffled at the margin whilst the lowest ones are scarlet-blotched.

Two outstanding show and garden varieties in the cream-pink shades are 'Pactolus' and 'Sheherezade,' both of which received the First Class Certificate in 1952. The apricot-cream orange-blotched 'Pactolus' is reported to be an outstanding plant for forcing and the rich crimson-blotched 'Sheherezade' should be useful for market.

Out of the many reds which now are available the following may be

noted; the orange-russet 'Circe,' the mandarin-red 'New Europe' and the 'Tivoli' seedling 'Pall Mall', which is a better doer than its parent. In the violet and blue shades 'Pfitzer's Sensation' is an outstanding deep violet colour, while 'Ravel' is the nearest approach to a blue Gladiolus that has yet been bred.

Before leaving the Gladioli the visitor should not fail to inspect the new 'Butterfly' and miniature-flowered varieties which are situated at the end of the trial. Raised by HEDGECOCK in America, 'Atom' has small hooded scarlet flowers edged with white and has been in the trial for four years. The new 'Butterfly' types of Messrs. Konynenburg & Mark were seen in the trial for the first time in 1953 and three of them received awards in that year. They are the orange, scarlet-marked 'Vivaldi,' the salmon-pink, orange-blotched 'Melodie' and the pink, scarlet-marked 'Femina.' They can surely be expected to obtain a place in any garden, for the dainty flowers are well placed on a wiry stem which may be up to 4½ feet high and thus make excellent plants for the border and also for cutting for the house.

BUILDING AND PLANTING A RETAINING WALL

Walter E. Th. Ingwersen, V.M.H.

(*Lecture given on April* 27, 1954; MR. H. G. HILLIER *in the Chair*)

WALLS, and especially old walls, have had a fascination for me since my early youth; ancient walls of brick or stone, etched with lichens and cushioned with moss on the shaded sides, in which certain Ferns, and the curious Wall Pennywort had found lodgment, and the sunny tops gilded with close carpets of the Wall Pepper (*Sedum acre*).

It was a marvel to me how these plants found support for their life on such starvation diet, or again on walls of old ruins, such as Conway Castle, crowned with flowering tufts of the wild Wallflower, scenting the keen sea air, or on old flint walls, too, in which the Snapdragon had found a roothold, and where it had become a good perennial plant in the meagre sustenance it could wrest from the old mortar. Here, this plant never suffers from the dread Rust disease that makes the modern Antirrhinum almost impossible to cultivate in some gardens.

Or I think of walls, once again near the coast, where the red Valerian had colonized, or in an old abbey ruin along the river Wey in Surrey, where Echium and wild Roses painted pictures of beauty against the summer sky.

All these plants seemed so happy and healthy in their self-sought homes that the thought came to my mind, why not try to create something of this kind in our gardens? Take, for instance, that steep grass

slope in the garden, where the ground had been levelled to form a tennis court. It had been turfed over and required endless attention and clipping to keep it even approximately tidy. Such a steep slope became my first attempt at building a retaining wall.

I do not claim that I was the inventor of such a wall; there must have been many similar ones up and down the country, a number of which had developed a little flora of their own. Look at the many walls of this kind supporting the steep bank of a so-called ha-ha, or sunken fence, dividing the pleasure garden from adjoining parkland, where fallow deer or cattle could be watched, apparently grazing in the garden. On steeply sloping ground, too, retaining walls enough had been constructed to terrace gardens at various levels, and there must be hundreds of miles of retaining walls holding up the vineyards in wine-growing countries. No, retaining walls are no modern invention, and I have little doubt but that the famous hanging gardens of Babylon were kept up by such walls.

It is evident, therefore, that there is no novelty in retaining walls, and that they can be made the happy home of many rock or alpine plants should be more widely realized. Perhaps it can become the answer to the vexed question about rock gardens in the vicinity of houses, where many purists claim that they are out of place. " No rock garden should be within sight of a house," once thundered a voice well known in horticulture. To this a witty friend of mine replied: "Many rock gardens should not be in sight of anything." But that is all long ago and need not vex us here. The fact remains that a retaining wall, if properly built, will provide ideal growing conditions for many lovely plants, some of which will colonize in such conditions and look after themselves, leaving to us only the task of keeping them in check where their colonizing capacities become obstreperous and threaten the life of less vigorous but well-loved neighbours.

Harking back for a moment to steep grass banks and their upkeep; gardeners are few and far between, and most of us are too poor nowadays to keep an adequate staff of trained gardeners, more's the pity. The consequence is that such banks become neglected, patchy, and badly kept and an eyesore in the garden. No machine has yet been invented to cut such steep gradients, and hand clipping is slow, tiresome and very costly if performed by hired labour. So, away with them, and transform them into happy homes for beautiful plants needing only a minimum of attention that can easily be given by the owner, even if he or she is no longer very young and spritely.

Now I am not pretending that a retaining wall is inexpensive to construct where walling stone has to be bought; it is not. Suitable stone is not cheap except in such districts as the Cotswolds, where appropriate flattish stone is easily procured. Where stone has to be shaped or dressed by hand, a retaining wall can become very expensive indeed. In stoneless districts where additional costs of cartage by rail or road have to be considered, it may be best to use old bricks, which will answer quite

well, especially if the topmost, finishing courses are cemented together, or if a coping of flat stones is used to finish off the work. The lower courses will be held firmly in position by the weight of those above them, but to have such comparatively light material as bricks loose in the topmost run would be inviting them to fall off during gardening operations near the top.

One of the best materials for retaining walls is the Sussex sandstone, which is easily quarried in suitable pieces as it cleaves easily and breaks at right angles. I am fond of this stone because it is porous and absorbent, and sucks up and holds water for the use of the plants inserted as the wall is being built.

In addition to the stone already mentioned, the Purbeck district provides suitable natural walling stone, and in Somerset there are quarries which produce limestone very suitable for walling, as there are beds where the natural cleavage line runs horizontally and the stones can be quarried at the desired thickness and need no further trimming and shaping. I have had similar stone from quarries on the Isle of Man, and there must be quarries up and down the country, especially in Yorkshire, where stone can be obtained that needs no costly handling nor cutting.

Now, you will ask: Is it easy to build such a wall? That question is not readily answered, but, as the building material is angular and need not be unwieldy or too heavy, I think that any handy man should be able to make a pretty good job of a wall as long as he understands a few simple principles and possesses a fairly straight eye. It is far easier to build a wall than a good and realistic rock garden. A wall is built on straight lines, and one starts with a shallow trench which is slightly deeper towards the solid bank of earth, and a line may be stretched along the front as a guide.

At the extreme ends drive in sighting posts at the angle to which the wall is to be built—and remember that a retaining wall should not be dead upright but must tilt slightly backwards into the bank. As the work grows up, lift your guiding line now and then and stretch it tightly between the sighting posts to check if your work is straight and level.

Remember, too, that every layer of stone put in should recede about a quarter of an inch from the front edge of the layer below it. As each course is completed, ram very tightly the soil behind the stones, and cover the stone surface you have built with a layer, half an inch deep, of fine soil. This makes a bed for the next layer of stones. Ensure also that where stone joins stone in the lower layer, the stones in the layer immediately above bridge over these joints. This makes for strength and firmness.

After three or four layers have been built to your satisfaction, you can begin to insert plants as the work proceeds. I like to use pot-grown plants for this as far as possible. Turn the plant out of its pot, remove any crocks from the base of the potball, and then place the potball on the layer of fine soil with the neck of the plant flush with the edge of

the stones, and put your hand upon it and press down until it is sufficiently flattened and place a stone upon it. It is well to see that the potball is thoroughly moist, so that it will flatten out with ease and without hurting the roots embedded in it. Use trailing plants for the lower layers as you build and plant, and leave the upper layers for compact, cushion-forming plants so that the more vigorous growing plants can trail to their heart's content without growing over, and smothering, the smaller, more compact varieties.

Whilst building the third or fourth course it will be well to turn one of the longer stones into the bank here and there to act as an anchor, and I need not repeat that, as the wall grows, the soil behind it must be continually rammed as firmly as possible to avoid subsequent settlement, which might be disastrous. At the beginning and the end of the wall, tie stones must be built into the bank of course, and the same must be done if the wall is a long one and it is desired to break the run by a flight of steps to a higher level.

If the bank is a high one, I like to break the wall into sections horizontally, too; to step it back and make a convenient terrace at a height of about 3 feet. This makes a very convenient bed at an easy level for a scree in which to grow some of the choicest alpine plants. Such a bed is a delight and a blessing to middle-aged or elderly people, bringing the choicest high alpine flowers of the most lowly stature to almost eye level, and conveniently easy to deal with.

To contrive such a bed it is advisable, of course, to fill it to the depth of a foot or so with a suitable mixture of scree soil. The drainage will be perfect at that height in any case. Two feet wide is a convenient width, and from that level the wall building is resumed and carries on exactly as before until the top level has been reached, or, if the bank is a very high one, another little terrace can be formed. In such a case it is advisable to bed some convenient stepping stones into the surface to enable the cultivator to get at the higher plants without tramping on the choice plants in the scree beds. Such a stepped-back wall is shown (Figs. 91 and 92) in the building stage, and will give more instruction than I can convey in words.

Should the wall face north, such raised little terraces could be filled with a mixture of peat and leaf-mould, which would provide good opportunities for the cultivation of the choicest small Ericaceous plants, and many other lovely peat-lovers. Great clumps of the rarer Asiatic Gentians and their fine garden hybrids would find homes here in which their great beauty can be enjoyed to the full without stooping. North-facing walls, too, form ideal homes for the lovely Ramondas, Haberleas, the choice *Jankaea Heldreichii*, and the great silver Saxifragas like *S. longifolia*, *S. lingulata*, and the astounding hybrid between these two, *S.* × 'Tumbling Waters.'

It may come as a surprise to many people, but I have recently found that such a wall with any of the better Lewisias inserted in it as planting proceeds makes the ideal home for these plants, which prove so tricky

in some gardens, especially where the soil is chalky. On the flat surfaces, rather close against the stepped-back wall, is a good place for the charming *Calceolaria tenella*, which there becomes a mildly climbing plant, covering the stones with its dainty greenery, adangle with pretty yellow flowers. The rare *C. Darwinii*, too, has been found to approve of such cool and shaded positions, as does *Omphalodes Luciliae*; and the late-flowering Saxifragas, *S. Fortunei* and *S. cortusiaefolia*, are extraordinarily happy in such positions.

The dainty little Bluetts of our American cousins, also known as Quaker Ladies, or *Houstonia caerulea*, I have never been able to appreciate so much as on one of these raised peat beds. My latest triumph has been masses of *Epigaea asiatica*. Planted out as seedlings, they have spread and made themselves at home, and bring their delicious scent up to nose level, as it were.

I hope that the illustrations will amplify much of what I have set down here and give you useful ideas for the building of this convenient type of garden, and the transforming of a difficult site into a thing of beauty.

PLANTS FOR SUNNY WALLS

Saxifraga aizoon rosea. Pretty silvery cushions bedecked in June with sprays of soft red flowers. With it plant *S. aizoon lutea* with less silvery cushions and sprays of canary-yellow flowers on 6-inch stems.

Saxifraga thessalica. This has silvery rosettes of narrow pointed leaves and spires of translucent red flowers. It is a glory of the limestone cliffs of Mount Olympus.

Lewisia Howellii or any of its garden hybrids. All with fleshy-leaved starfish-like rosettes. The flowers are carried on freely branching stems and produced over a considerable period. They are of circular outline and each petal has a lighter coloured stripe running its length. The ground colour is some shade of red.

Cytisus demisus is a trailing pygmy Broom with tiny trifoliate leaves and small, golden pea-shaped flowers. It makes hummocks of soft green and gold.

Phlox caespitosa hails like all the Phloxes from N. America. This one makes dense, almost spiny cushions that cover themselves in May–June with thousands of pretty palest mauve to white flowers.

Primula marginata grows wild on cliffs and ledges of the Maritime Alps. It is of a somewhat shrubby nature and eventually it forms a stem that branches and each branch ends in a rosette of more or less jagged edged leaves, the leaf margin powdered with a white farina. The delightfully scented flowers are some shade of mauve.

Asperula suberosa is unbelievably dainty and fragile looking. It is found wild in the marble cliffs of Mount Athos in Greece. It forms sprawling cushions of finely cut leaves covered with silky hairs, giving

it a silvery sheen, and many thousands of pretty soft pink trumpet-shaped flowers adorn these lovely cushions for months on end. The plant is difficult on the flat but it loves the rapid drainage provided by a sunny wall.

Sempervivum arachnoideum. The Cobweb Houseleek. All the Houseleeks, which might be loosely described as the Cacti of Europe, are sunlovers and are never happier than when growing on a sunny wall. They all have rosettes of very fleshy leaves and vary unendingly in the size of their rosettes and the colouring and hairiness of their foliage. The flowers are of Catherine-wheel shape and of various colours. The Cobweb Houseleek is covered in silky hairs drawn like a web from leaf-tip to leaf-tip and the flowers are glowing red.

Saponaria ocymoides. Must be seen to be believed, with its myriads of bright pink flowers studding the tumbling masses and curtains of neat foliage. It will need room and must be placed where it cannot overgrow and smother weaker plants.

Cytisus × *Beanii*. This is a trailing hybrid Broom raised at Kew and it forms a perfect cataract of tumbling dainty greenery set in June with thousands of soft yellow pea flowers.

Cytisus × *kewensis* is of much the same parentage, also raised at Kew but in this case the dainty pea-shaped flowers are white. Both need a fair amount of territory to themselves. They cover finally about a square yard.

Verbascum spinosum is a curious and attractive little Mullein that has forsaken the family habit of basal rosette and towering spire of flowers and makes instead a low hemispherical bushlet set with golden flowers, the flower stems of the previous years become branching spines which, in the wilds of Greece protect the plant from browsing goats.

Aster alpinus. This is not in nature a cliff plant but it finds safety from voles and field-mice in a wall and makes low patches of greenery, from which rise the stems bearing lovely mauve to purple flowers with an orange centre.

Geranium subcaulescens, too, succeeds on high alpine lawns and grows readily in the scree, but it makes a fine plant in the wall with its long succession of richest crimson flowers over very long periods.

Daphne oleoides, a dwarf shrublet from Balkan ranges, making a lovely compact little shrub in a sunny wall where it becomes a silver-grey hemisphere. The creamy white trumpet flowers are followed by orange berries.

Campanula cochlearifolia alba, the delightfully graceful little bellflower adangle with white bells on threadlike stems wanders about in the joints of the wall and may be allowed to work its will; it never seems out of place. It is known by the Swiss as 'The Nun of the Meadows.' It must be an old friend of most of us under the names of *C. pumila* or *C. pusilla*, but the less euphonious name must now be used for this charming plant.

PLANTS FOR SUNNY TERRACES OR SHELVES

Daphne Cneorum, or even better its still finer form *D. Cneorum eximia*, should find a place here. It forms sprawling masses of wiry stems set with narrow dark green foliage and each stem ends in a rounded head of intoxicatingly sweet-scented little trumpets of luminous red trumpet flowers in the case of the *eximia* form and soft rose colour in the case of the type plant. These plants appreciate top dressings of leaf-mould in early spring and in the autumn to cover the basal portions of the many stems as these drop their leaves. The formation of new roots is encouraged by this treatment for the general benefit of this delightful dwarf shrub.

Campanula Hawkinsiana was first found in the Pindus Mountains by our collecting party in 1929. The first introduction died out, but DR. ROGER BEVAN, who followed in our footsteps a year later, had better luck and from his introduction have sprung all the plants of this now in cultivation. Even so it would now be lost again if COL. F. C. STERN had not placed it so happily on one of his "billiard-table" gardens at Highdown that it seeds there happily and replenishes the stocks of less skilful growers. It is unbelievably free-flowering and often exhausts itself and dies without seeding.

Salix apoda. This is a fascinating little Willow from high up on Elbruz in the Caucasus. Our party discovered it there in 1935 at over 10,000 feet. It is curious that the male form should be prostrate with quite short catkins and the female form an upright growing plant of 2 feet or so with plain green catkins up to 4 inches long. The male form is the one to plant because of the colour display of its catkins, which start like so many tiny grey mice sitting up with their noses in the air. After a few days the noses turn red and each little mouse puts on a golden collar which is followed by further bands of gold as the stamens approach maturity. Every beholder is fascinated by the changing display. It is unfortunate that it cannot be increased fast enough to supply all the wants.

Crocus corsicus is a delightful little Crocus not seen often enough in our gardens. It might be described as a miniature edition of the much better-known *C. Imperati*. The buff-coloured buds are delicately feathered with sepia pencillings, and the expanded bloom, a lovely, lowly star of mauve pink exhaling a sweet fragrance most easily enjoyed on a ledge or terrace of near breast high, which adds so much to the pleasure of those of us who are no longer so young or too corpulent to kneel to do homage to this charming bulbous plant of early spring.

Daphne petraea grandiflora. This is doubtlessly the choicest and most lovely of the Daphne clan. Originally thought to grow only on the sheer limestone cliffs of the Cima Tombea in N.E. Italy, it has recently been discovered on several neighbouring mountains where great cushions can be espied depending from some fissure too narrow to admit a knife point, and happily most often high above the reach

of would-be marauders. A few small shoots of it wrapped in cellophane and posted home provide material for grafting on young plants of some commoner Daphne, which soon results in the loveliest dense evergreen cushions which disappear each spring under the wealth of its lovely blossoms.

Hypericum ericoides hails from the mountains of southern Spain where it forms dainty heather-like patches of soft green, crowned with bright red buds and dainty golden stars when the flowers expand. The whole plant in full flower is rarely more than 3 inches high and it enjoys the sharp drainage and sheltered position of an elevated terrace in a retaining wall.

Aquilegia Jonesii from the far away Rocky Mountains makes an ideal companion to the little Hypericum. It has dainty, lacy blue-grey leafage and large blue and white flowers carried singly on short stems. No living plants of this should be collected as these resent disturbance, and the plant is easily raised from seeds collected in the wild or under cultivation. I have never noted a tendency in this species to hybridize as most other Aquilegias do with the slightest provocation.

Thalictrum kiusianum is a dainty Meadow Rue from Japan. It is a very dainty plant indeed and goes well with the foregoing plant. The foliage is as finely cut as Maidenhair Fern, and the very pretty rosy flowers are produced freely for a considerable period on 3-inch stems.

Celsia acaulis is a diminutive cousin of the Verbascums and was introduced from Crete by DR. P. H. DAVIES just prior to the Second World War. It forms basal rosettes of somewhat crinkled smooth leaves from which rise successions of pretty yellow flowers on quite short stems. Under cultivation it has hybridized with *Verbascum phoeniceum* and produced a very acceptable offspring.

PLANTS FOR NORTH FACING OR SHADED WALLS

Saxifraga Grisebachii. I do not think that I shall ever forget my first sight of this lovely and startling *Saxifraga* on the sheer limestone cliffs of the Albanian Alps where they fall almost perpendicular to the Drin valley. There were the lovely symmetrical rosettes by their thousands, each one erupting a crimson crozier scintillating with velvety glandular fur. That was the fine form known in cultivation as 'Wisley variety' and much superior to the common form we had previously found in the mountains of Montenegro. Why is this lovely plant accounted so difficult in cultivation ? I hope I have pointed a lesson. It does not like water standing in the centre of its slightly funnel-shaped rosettes. That is why it grows sideways on vertical cliff faces.

Ramonda Myconi. Somehow the name of *R. pyrenaica* tripped easier off the tongue, but priority will have its right and *R. Myconi* it will have to be for the future. Here again we have a rosetted plant, but

in this case the leaves are crinkly and densely hairy below and towards their base and we all have learned long ago that to succeed the plant must be grown sideways and preferably facing north. It is a beautiful plant, and strange, so strange that earlier classifiers have placed it with the Bear's Ears or Auriculas or with the Mulleins. It produces its deep purple orange-centred flowers in May or early June (Fig. 93).

Ramonda serbica is very similar in many ways, but its rounded flower consists commonly of four segments only instead of the five segments of *R. Myconi*. Both these beauties belong to the natural order of Gesneriaceae, an order of tropical plants which before the glacial periods lived in Europe. Only a very few remnant species of the order have remained in the mountain ranges of Europe. In the west only *R. Myconi*, but in the Balkans we have *R. serbica* and its variety *R. serbica Nathaliae*, the Haberleas and that silvery wonder *Jankaea Heldreichii*. All of these are ideal plants for shaded walls excepting only the *Jankaea* which remains too rare to trust outside in our dank rather than cold winters.

Conandron ramondioides is another Gesneriad, but this one survived in the mountains of Japan, where it is known as 'Rock-Tobacco,' for its large crinkly leaves can be dried and smoked by folks too poor to buy the imported leaf. *Conandron* has branching flower stems bearing numerous flowers of pale tints and vaguely reminiscent of potato blooms. For the moistest and most wind-sheltered nook of the wall only.

Sedum cauticola is another good plant we owe to Japan which is an ideal plant for our shaded wall. It is a true cliff dweller. It is deciduous and dies back into a knobbly rootstock for the winter, and new trailing shoots grow each year. They are set with prettily cut fleshy leaves of glaucous hue and end in corymbs of deep red buds opening into rich red flowers. The flowers last for a long time on a shaded wall and provide an utterly satisfying picture in combination with the foliage.

Saxifraga karadzicensis. Makes an ideal plant for a shaded wall. We saw it first in 1937, forming lovely dense hummocks of darkest green studded with lovely milk-white flowers on the north-facing cliffs of Djalica i Lumnes in Northern Albania. It had not been previously known in cultivation. It belongs to the *Kabschia* group and the section *marginatae* and it must be the smallest development of that section.

Cotoneaster microphylla var. *thymifolia* makes a lovely close-trailing evergreen shrub for such a wall and is entirely charming with its small glossy leafage, pretty Hawthorn-like flowers and its crop of fine red berries which persist through much of the winter.

Cotoneaster humifusa, also known as *C. Dammeri* var. *radicans* is another good close-trailing shrub for our purpose. This has larger leaves and larger berries of a different shade of red. The flowers are similar to that of the other. Both these are particularly good flanking steps where something is wanted that may be rubbed against without being harmed.

PLANTS FOR RECESSED BEDS IN SHADED WALLS

Rhododendron myrtilloides forms a miniature gnarled bush set with rounded evergreen perfectly proportioned leaves and the prettiest waxy bells each poised on its own short stem. A very perfect pygmy plant that is best seen at breast high on a step-back or terrace of a shaded wall.

Rhododendron repens (*Forrestii*) is another very perfect miniature Rhododendron for our purpose. But here the habit is creeping and mat-forming. The rounded leaves are bigger and the plant likes, perhaps, a little extra moisture, which is easily provided at such a convenient position. The flowers are nothing less than startling, but not always so freely produced as one could wish. They are luminous bells of good substance and of fiery red verging to orange.

Rhododendron leucaspis is a bigger plant that forms a somewhat sprawling bush a foot or 18 inches high and twice as much in diameter. The foliage is shortly hairy and, when happy, every shoot ends in a cluster of soft pink buds which open into white, bell-shaped flowers of distinction. That is, if the season be kind to you. This Rhododendron is very hardy, but it flowers early and both buds and flowers are distinctly frost tender, for which reason I advise a position on a recess of a north-facing wall where the rays of the rising sun cannot reach and set up the rapid thaw which does the real harm to frozen plants.

Daphne Blagayana, the lovely trailing Daphne first found by COUNT BLAGAY at Rimski Doblica, in Jugo-Slavia, where it grows in shaded Beech woods and scents the spring air with sheer delight. Rightly placed where it can never be sun-scorched or dried out too much this plant is not difficult and, although it sprawls about a bit, I would always find room for it.

Arcterica nana, which we now are told should be called *Pieris nana*, is another treasure for our terraced north wall. The whole plant rarely exceeds 3 to 4 inches in height. In time it forms perfectly proportioned little mats of shoots covered with small leaves which in the spring become heavily studded with charming little white bells very sweetly scented. A cool bed of peaty soil and an occasional top-dressing is all it asks for, a trouble it amply repays.

Cassiope lycopodioides is another treasure we owe to Japan. In the right place it becomes easy and happy and forms mats 2 to 3 inches high of tangled scale-leafed greenery like an attractive Club Moss, but in the spring every shoot tip hangs out a perfect little white bell, for all the world like bells picked of a Lily of the Valley, and each borne on a thread-like stem less than an inch high. It is essentially a plant for inspection at an easy level.

Phlox adsurgens, a very real treasure from N. America, is often difficult in the ordinary garden. It does ask for well-drained coolness and a peaty soil. For this choice plant the wall recess is just right and there it will form low clumps of shiny green leaves and for weeks

on end carry the very lovely soft pink-and-white stars in contentment and happiness.

Dianthus alpinus. I have often found this delightful carpeting Alpine pink languishing in rock gardens where it has the name of being temperamental. Place this on your north-facing terrace and it will surprise you with its glistening carpet of narrow dark-green leaves, and the many rounded inch-wide flowers, each with a darker zone towards the base. A lovely picture not easily forgotten.

Sisyrinchium grandiflorum, now more correctly called *S. Douglasii*, after DAVID DOUGLAS, who travelled and collected plants for The Royal Horticultural Society over a century ago. This is a very inconspicuous plant which develops quite early in the year a few almost grassy shoots and then suddenly surprises you by swinging from their tips the most wonderful satiny purple bells about an inch long. Soon after that the plant dies down until the following spring when it repeats its marvel in increased numbers of frail stems and unbelievably lovely bells. It has a pure white form of equal beauty.

Parochetus communis is the last plant. It is sometimes known as the 'Shamrock Pea,' which is indeed a perfect description of this pretty plant that trails about flat on the ground. It is as a ground coverer that I recommend it, and, because when happy and if the season is mild, it will rejoice you with its dainty bright blue pea-shaped flowers in mid winter when all the other plants are at rest. Its leaves are just little Shamrock leaves, each with a bronze chevron, and all it asks is coolness and a dampish spot especially in winter, which is more than surprising when one realizes that this plant came to us from India and mountains in the steaming jungles of Malaya.

THE SMALLER GARDEN III

BEAMISH

Lanning Roper

BEAMISH, near Albrighton, the Shropshire garden of MRS. GARNETT-BOTFIELD,* is one of the outstanding small gardens in England today. Although not exceeding 3½ acres including the house, the paddock and the orchard, it is laid out with ingenuity and imagination. The collection of plants is very inclusive, the rarities and the old favourites being treated with impartiality, each plant being judged strictly on its merits.

The site was acquired in 1908 by MAJOR GARNETT-BOTFIELD. There was no house, no garden, in fact no vegetation save the wild plants of

* EDITOR'S NOTE :—We regret to have to report the death of MRS. GARNETT-BOTFIELD since this article was prepared. She had seen and approved it and helped to select the illustrations.

the fields. The house surrounded by its garden was placed at the foot of a gentle slope so that there was shelter from the north-east and north-west. The soil is a combination of clay and loam with a certain amount of sand; it is rich and strong growing but tends to be heavy and to hold the moisture especially in low places. In the vicinity was an old quarry, whence came the red sandstone for the garden walls and later for the rock garden. The crushed gravel on the drive is this same pinkish stone. This consistent use of local material, which was even carried out on the terrace in front of the house by using the cobbles removed from the flower beds for the paving of the paths, gives a harmony of colour which blends with the colour of the earth and the landscape.

The utilization of space is important in a garden and the smaller the space the more carefully it must be planned. At Beamish every available bit is used to good advantage. From the entrance gate one descends by a gently sloping pink gravel drive lined on both sides with broad flat-topped 'Bigarreau Napoleon' Cherries, beautiful in flower and yielding a copious crop. These are underplanted with bulbs, Daffodils in spring and clumps of huge purple *Colchicum speciosum* in October when the leaves above have turned to burnished gold.

Through a white rail gate is a courtyard flanked on one side by a mixed shrub and herbaceous border against a wall and on the other by the well-proportioned house with its two projecting wings, simply planted with huge old hardy Fuchsias, both pink and red, a Myrtle, a climbing Rose and *Clematis Henryi* which reach the eaves. The Fuchsias, 'Madame Cornellissen,' 'Mrs. Popple' and 'Dunrobbin Bedder,' came from MR. E. A. BOWLES'S garden at Myddelton House and have grown for twenty years here in the shelter of the house. One is immediately struck by the carefully raked gravel of the forecourt, the well-kept verges, the skilfully trained climbers on the house and by the vigour and health of every plant. An air of well-being and love for the garden pervades.

From the forecourt there is a charming vista through the open door of the house to the garden beyond and looking the other way one is lured through a gate which divides the border on the same axis. This is overhung by two very large-flowering Cherries, one a large-flowered single white, the other a deep pink double with brown foliage, slightly deeper in colour than 'Kanzan,' and an old *Rosa Moyesii*, backed by a luxuriance of shrubs and trees including five columnar Italian Cypresses, Lilacs, Philadelphus, variegated Holly and evergreen Berberis. Here, as throughout the garden, there is a nice balance between deciduous and evergreen planting. In the borders more Lilacs, *Daphne Mezereum*, Paeonies, Phlox, Nepeta, Michaelmas Daisies, Penstemons, old-fashioned Roses and Chrysanthemums provide a succession of colour and interest.

One of the glories at Beamish are the hedges that divide the more or less level site into a series of sheltered units, which are arranged on several axes so that there are long vistas through gates and arches which give a feeling of space and of the careful integration of one part of the

garden with another, so that there is a unity of design. All the hedges are beautifully kept, the straight lines straight, the curves gentle and even, the topiary solid with a three-dimensional feeling of solid form. MRS. GARNETT-BOTFIELD drew out this plan on squared drawing paper before making the garden.

One is impressed by the variety of hedging plants and the nice feeling for the suitability of a plant to its function. Great walls of Beech separate the orchard from the paddock beyond, while Thorn and Beech shut the kitchen garden from the fields where Thorn is native. Damson trees grow out of the hedge and in this way their roots are undisturbed, and the early Potatoes are planted in long rows in the lee between the hedge and the fence. Huge glistening hedges of Holly 10 feet high shut out the winds from the north-west and form an impenetrable barrier for cattle in the pastures beyond. Near the house for features which require topiary treatment Yew was selected, for it is the most architectural and sculptural in feeling of all hedging material. In the vegetable garden a hedge of *Cupressus Lawsoniana* is a surprising contrast to the soft greens of cob nuts, fruit trees and vegetables.

There is no doubt about it that hedges require labour for they must be clipped regularly, but since different plants require clipping at different times the work can be spread over a longer period. Mixed hedges, charming as they may be with the contrasts of colour and texture, create another problem, for the season of growth and the rate of growth vary. The Thorn must be cut back at one season, the Holly or the Beech at another. But in spite of these added difficulties it has made possible the use of a great deal of hedging without the feeling of monotony. The careful thought which went into the design and the planting at a very early stage has paid lasting dividends, for the hedges form a frame for the pictures that were later painted with shrubs and flowers and grass. Here is a lesson for all planners of new gardens.

The garden is characterized by an air of tidiness and good care. Paths are swept, edges cut, hedges trimmed, beds weeded and plants staked. The fruit trees are well pruned, the Celery properly banked, the tops of the Onions neatly laid over and all this is done by the gardener, MR. FRED BROOME, who has been at Beamish for thirty-one years and before that by his predecessor, GEORGE EDWARDS. There have been only two gardeners in the forty-five years. In the old days there was another pair of hands and, now, a youth. How one wishes one could send a likely lad for training to a garden such as this, where he would learn sound practices, surrounded by the best of plants.

The potting shed is a delight with its rows of tools, well oiled and gleaming, showing that lovely surface which comes only with the alternation of constant use and care. From the ceiling hang baskets of many shapes and sizes, hanks of bast and other paraphernalia of gardening. Bins of sand, leaf, peat and loam are ready waiting to be used. There is a box marked " Rags," another of string, and flower-pots of all sizes. Everything is in readiness and conveniently at hand for

whatever operation may be under way—potting, spraying, labelling, seed sowing, or even the packing of plants for departing visitors. Awards to plants and other prizes are tacked up in neat rows, a constant reminder of the excellent products of the garden through the years.

On either side of the potting shed is a little greenhouse with freshly hosed floors and gleaming glass. Each overflows with plants, many of which find their way to the house in winter. *Jasminum polyanthum* is grown on globe-shaped bamboo frames as a pot plant, and in February these are spherical masses of white, rivalling in fragrance the big pots of *Rhododendron* 'Fragrantissimum.' Pelargoniums are treasured for their warm rich colours and there are many unusual varieties which came as cuttings from the Cape. One, in fact, was sent over on the first flight of the Comet. *P. sidaefolium* with deep reddish black scented flowers is one of many unusual species and a large-flowered velvety red one raised by MR. BROOME is an outstanding seedling. *Masdevallia Rushtonii* with its strange orange-brown flowers, *Vellozia viscosa* which this spring flowered for the first time in this country, and × *Homoglad* 'General Smuts,' a bigeneric cross between Homoglossum and Gladiolus, are other plants of particular interest. Into a small area only a limited number of plants can go so selection is important.

Nearby is a little alpine house with pans of *Cyclamen neapolitanum* and *C. cilicium*, *Fritillaria pontica*, *Oxalis lobata*, *Daphne collina*, *Cassiope rigida*, *Sternbergia lutea* var. *gracea*, and *Primula eburnea*, *frondosa* and *Allionii*, to name a few, at random. The dwarf white *Streptocarpus pusillus*, each growing from a solitary leaf, was collected by MRS. GARNETT-BOTFIELD in the Drakensberg. *Anoiganthus breviflorus*, *Pleione Pricei* and *Cheiranthus* 'Harpur Crewe,' double, yellow and scented, are a few of the other good plants which make a show in spring. Growing in pots plunged in the frames outside are hundreds of other plants which reveal her range of interest in widely varying genera from many parts of the world and again her nice discrimination in selection. One is also struck by the high standards of cultivation and the apparent ease with which even the most demanding of plants are grown.

A raised bed near the alpine house proves an excellent place not only to grow rare plants but to enjoy them. Here as in other parts of the garden are a variety of forms of alpine Auriculas and *Primula pubescens*. In April a fine plant of *Atragene alpina* was a cascade of bloom.

In the garden to the south of the house there is an unusual variety of interest, for it contains gardens within a garden. Off the house itself there is a charming enclosed one with pebble paths, a central bird bath and all manner of good plants chosen for their fragrance and their simple beauty. Then there are nursery beds of varying shapes and sizes outlined with stones and bricks to keep each inhabitant from encroaching on its neighbours. Bulbs from all over the world are grown here. There is a sundial at the intersection of the cross paths which are bordered with beds of herbaceous plants backed by Roses and Clematis,

among them a fine pink form of *C. macropetala* (Fig. 85). The four blocks of garden contain rows of Roses and flowers for cutting and some long rows of very fine *Lilium testaceum*, *Martagon album* and *regale*. Seldom have I seen these Lilies growing more vigorously. In spring there are masses of double white Primroses and a cream-coloured one showing Polyanthus blood. Many of the latter were raised from seed and are sweetly scented.

On the west front of the house there is a garden terrace on the same level as the ground floor so that the garden is an extension of the rooms and flowers look in the windows. A paved walk along this side of the house extends beyond in both directions to the furthest limits of the garden, thus forming one of the principal axes of the plan. At one end is a rustic lean-to shelter with a bench and at the other, a bay of clipped Yew with topiary birds with buttons for eyes and a garden bench. Against the house are white Wisteria, Forsythia, Lonicera, Fuchsia and *Clematis uncinata* and *C. akebeoides*, a form of *C. orientalis*. At the base there are clumps of Agapanthus, Rosemary, *Nerine flexuosa*, Veronicas and large tree Paeonies. Many of these were imported from Japan before the war and they flower freely, the delicate colours extremely effective in this border while others look well against a background of dark Yew.

In the strip of lawn which borders the path four mop-headed Robinias with their delicate foliage form accents correct in scale with the house. At their base, circular beds 5 feet in diameter are solid sheets of Rhodohypoxis, which look like pink-and-white shadows cast by the circular mass of foliage above. These trees are pleasant in their formality and the repetition is satisfying (Fig. 82).

A wide central grass path flanked by mixed borders leads from the door through a high Yew hedge to a rectangular lawn on a slightly lower level. Wooden posts with great swags of Roses, Clematis and Honeysuckle separate the borders from formal geometric gardens with brick-edged beds full to overflowing with Roses, Azaleas, Pinks, Dahlias, Hostas, Bergenias, Nepeta, Ericas, Daffodils and a host of other plants, which provide colour throughout the year. In spring there is a variety of bulbs, particularly the charming *Tulipa Orphanidea* which has increased and forms a lovely mass of unusual colour with its star-shaped flowers, orange overlaid with bronze and tinged with green and violet on the outside. The paths are of exceptional interest, for the design dates from the reign of Charles I and combines cobbles removed from the flower-beds with an edging of brick and a triple course of brick down the centre. Designs including squares, circles, crosses and even mottoes have been worked in lighter coloured pebbles. These paths were so perfectly made that every stone is firmly imbedded and the bricks have taken on a worn look. Winter and summer they provide colour and an interesting pattern (Figs. 83 and 84).

Off one end of the house is a tiny area amusingly dubbed "the Grouse Moor." Here Ericas, Cistus, Genistas, Cytisus and Gaultherias

grow in the shadows of Larch and Birch and Pine. In the spring there are Primroses and Bluebells in drifts.

Of all the features in the garden one of the most amusing is the treatment of the pig-sty, now unused but originally occupied by a happy tenant. The sloping corrugated iron roof has been heaped with a few inches of earth and here and there stones form pockets for plants. In full sun with sharp drainage it is a choice spot for Dianthus, Nepeta, Hypericums and Iris species, only the dwarfer forms being selected. *Hydrangea petiolaris* and Convolvulus climb up the walls and further disguise its utilitarian purpose. Not only is this an attractive innovation but a practical one, for the earth acts as insulation keeping the pig-sty warm in winter and cool in summer.

In a sheltered corner by the potting shed a single *Rosa chinensis*, a forerunner of the many *chinensis* Roses, grows up behind a Pomegranate. It is a wonderful rich reddish pink and flowers throughout the season. Late last November it was still a mass of fragrant bloom. This Rose, always known as MISS LOWE'S Rose, came from MR. BOWLES'S garden at Myddelton House. He in turn had been given it by DR. LOWE who gardened first in Scotland and later at Wimbledon. His daughter, MISS E. A. LOWE, was a clever artist and her lovely plate of it over the name 'Rosa indica var.' was figured in *The Garden*, vol. XXXII, August 18, 1887, at the request of WILLIAM ROBINSON, who saw the Rose growing at Wimbledon and recognized it as the single, wild red form of *Rosa chinensis* which had supposedly died out everywhere else in Europe and this country.

Like the Rose there are scores of other plants which have come from Myddelton House—special Crocuses, Anemones, the green Rose Plantain and, of course, Snowdrops. There are also a variety of forms of *Ranunculus Ficaria*, singles and doubles, in a range of colour from white through yellow to a coppery orange. Loveliest of all is a dwarf white form found by MISS CARMICHAEL in Dovedale. Other plants were collected by MAJOR and MRS. GARNETT-BOTFIELD on trips with MR. BOWLES and REGINALD FARRER in the Tyrol or the Alpes Maritimes. These treasures include the exquisite *Daphne Cneorum Verlottii*, a yard across and a solid mass of deep crimson flower in April, *Primula Allionii*, *Saxifraga cochlearis*, *Viola valderia*, etc.

Beamish, situated as it is in Shropshire near Wolverhampton, is not an area which one would suppose congenial to South African plants. Strangely enough many of them do extremely well and Watsonias, Agapanthus, *Kniphofia Galpinii* from the Drakensberg in Natal, *Tulbaghia pulchella* with its foxy smell and purple flowers in autumn, *Anoiganthus breviflorius* with its bright yellow flowers and *Cyrtanthus Macowanni*, the last two, both members of the *Amaryllidaceae*, grow outside but are sheltered through the winter.

Of all the South African plants which MRS. GARNETT-BOTFIELD grows the Rhodohypoxis is the favourite, and she was not only the introducer but the outstanding raiser of this genus in the whole country.

The collection started in 1926 with some dried-up bits which were found in a piece of turf sent from the Drakensberg mountains. From this came first a red form and then a white one. Since that time they have increased and through the years special forms have appeared which have been treated as clones and propagated vegetatively. MRS. GARNETT-BOTFIELD later went out to the Drakensberg to see them growing in their natural habitat.

The flowering season is a long one. The first flowers appear in April, reach a peak in late May and June and then flower spasmodically through the summer and the autumn. *Rhodohypoxis Baurii* is a clear pink and var. *platypetala* is white. The colour range has gradually been extended from the palest flesh-pink to a rich deep carmine-red. The size and form of the flowers are also variable, some having wider overlapping petals, more attractive than the narrow-petalled, star-like forms. The heavy texture of the petals is also a desirable character.

The plants themselves are hardy, withstanding even the coldest winters in Shropshire when the thermometer has recorded 30 degrees of frost and the ground has been carpeted with several feet of snow. Generally it is supposed that Rhodohypoxis, being a Natal plant, requires a light dry soil and a maximum of sun. At Beamish they are grown in either sun or half shade, in a lime-free open compost made up of loam, sand and leaf.

Recently, granulated peat has been substituted for the leaf as it has been found to last longer, as the leaf in the course of three years disintegrated completely. Hop manure is liberally used as it, too, keeps the soil open. Rhodohypoxis prefer moisture in the growing season and do not seem to mind the rather damp conditions which so often prevail in this garden. Some plants, in fact, have survived in waterlogged sites in the rock garden. Certainly Rhodohypoxis require more water than is generally supposed.

The cultivation of Rhodohypoxis at Beamish has been developed to an art as the photographs of the circular beds under the mop-headed Robinias on the south terrace show (Fig. 82). Here they have grown and multiplied so prolifically that they require a periodic lifting and dividing. July and August are the best months for the operation, when growth is active and the divisions have time to become established before frost. The fleshy roots, at first for all the world resembling the elongated roots of a tooth, later become concave at the bottom and shrunken in size, but this is natural and no cause for alarm. They are easily pulled apart, but great care must be taken as they break easily.

Rhodohypoxis are easily grown from seeds. These are produced freely, but as a rule the white forms produce more than the red; the white seedlings in turn mature more quickly. The seeds should be sown in a lime-free open compost as soon as ripe. The seedlings usually germinate in about six weeks and may be expected to flower in the second year and occasionally in the first.

In 1927, *Rhodohypoxis Baurii* received an Award of Merit when shown at Vincent Square as *R. rubella*. 'Beamish White,' shown in

Photo, Birmingham Post and Mail

BEAMISH

FIG. 82—View of the Garden Terrace in May with Robinias under-planted with circular beds of Rhodohypoxis (See p. 352)

FIG. 83—Well-kept hedges and paths of cobble and brick are important features in the garden design (See page 352)

Photos, J. E. Downward

FIG. 84—The Rose Garden in early spring showing a clipped variegated Holly used as a central feature (See p. 352)

Photo, Birmingham Post and Mail

FIG. 85—The sundial with self-sown Verbascums at the base and in the background topiary features (See p. 352)

Photo, J. E. Downward

FIG. 86—The Apple orchard in Daffodil time (See p. 356)

FIG. 87—*Thlaspi cordifolia*, a good carpeting plant, in front of a fine form of Skimmia (See p. 356)

Photos, J. E. Downward

FIG. 88—An unusual white Caltha from Kashmir has seeded itself freely throughout the garden (See p. 355)

Photo, J. E. Downward

FIG. 89—Primula 'Pink Foam' on the lower side of the Vegetable Garden

Photo, Birmingham Post and Mail

FIG. 90—The path leading to the Rock Garden with a pool to the left (See p. 356)

FIG. 91—The building of a dry wall requires care in the stepping back of each course of stone (See p. 341)

Photos, Donald F. Merrett

BUILDING AND PLANTING A RETAINING WALL

FIG. 92—The wall completed and planted with Ramondas and *Phlox divaricata* 'Violet Queen' extreme right (See p. 341)

Photos, Donald F. Merrett

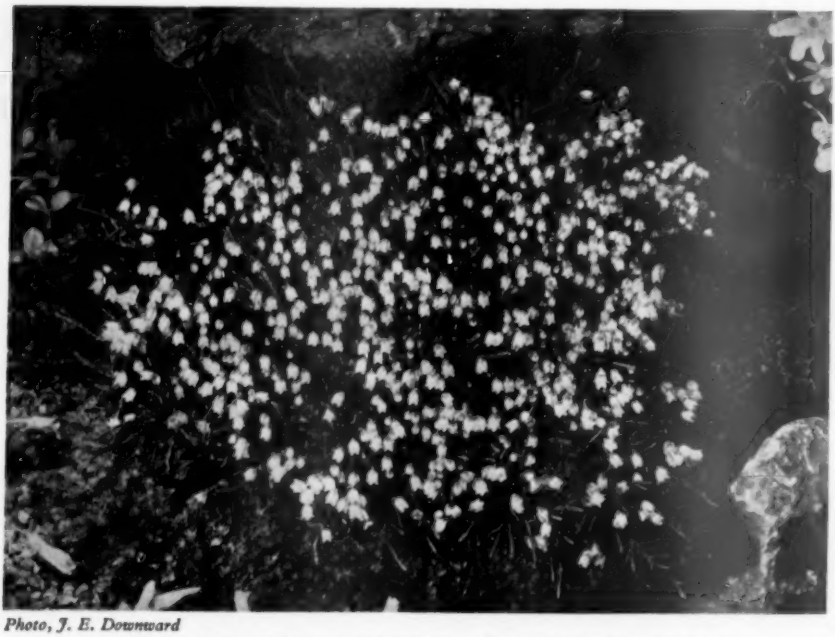
BUILDING AND PLANTING A RETAINING WALL

FIG. 93—*Ramonda Myconi* growing happily in a dry wall (See p. 346)

FIG. 94—*Cotyledon oppositifolia* with its pendent racemes of golden yellow

Photo, R. P. Scase

FIG. 95—*Primula Rhamzanae*, a new introduction from Western Nepal (See p. 357)



Photo, J. E. Downward

BUILDING AND PLANTING A RETAINING WALL

FIG. 96—An unusually well-flowered plant of *Cassiope selaginoides*

1937, was the first of the selected broad-petalled forms and it still is one of the very good whites. 'Margaret Rose' was shown in 1938 and 'Ruth,' probably the best of all, received an Award of Merit in 1944, and *R. Baurii major*, the same award in 1945. In *1950* MRS. GARNETT-BOTFIELD was awarded the Lindley Medal for an exhibit of varieties of *R. Baurii*. What a wonderful way to celebrate one's eightieth year.

Some of the Pinks tend to fade with the result that there are white as well as various shades of pink flowers on the same plant simultaneously. 'E. A. Bowles' is a fine clone which shows this characteristic. 'Dulcie' is a very good pale pink. 'Pinkeen' and 'Eva' are the best of the fadeless Pinks while 'Maculatus' is the largest. 'Pictus,' a white-tipped Pink, is the largest of all forms so far developed. 'Beamish Red' this year was in full flower in open frames in mid-May and was outstanding.

Today there are literally thousands of plants and the frames and seedling beds contain thousands more which may reveal other new forms. This native of Natal has certainly taken kindly to Shropshire.

For those who find stone tanks or sinks hard to find or too expensive, as they are rapidly becoming, there is a good answer at Beamish. Slabs of rough paving stone are sunk in the earth to form a rectangle of the desired size and fastened with heavy galvanized wire to hold the stones in place. There is no bottom so when filled with earth there is sufficient depths to grow large plants. Tucked in a corner backed by Yew is a large tank of *Meconopsis grandis* which is shown off to perfection against this background. Such tanks are ideal for Regale Lilies. They are also one of the answers for small ericaceous plants in a calcareous garden.

The rock garden in the south-west corner of the garden is bounded by high hedges and dominated by a large *Liriodendron Tulipifera*, a *Cedrus atlantica glauca*, a white Thorn, *Libocedrus decurrens* and *Corylus Avellana contorta*, the Mad Nut, which is at its best in the winter when the corkscrew twists of the bare branches can be fully appreciated. These trees cast shade and their roots provide areas where the drainage is good due to the quantity of fibrous roots near the surface. At the far end the main part of the rock garden was built around a semicircular core of burnt clay and stone brought in from the nearby quarry. This slopes down to a puddled pool in the centre with no cementing so that the roots of Iris, Primulas, Spiraeas and Mimulus can go deep in the rich silt. This pool was made from an old dew pond, a term used locally to apply to pools which are collecting basins for surface water. Behind there is a loose planting of flowering Cherries, Brooms, Hollies and evergreens which form an indefinite background and give a feeling of depth rather than of a boundary planting which it actually is. The top of the rock garden is planted with shrubby Potentillas, Kurume Azaleas, Berberis, dwarf Acers and with clumps of Lilies everywhere.

A white Marsh Marigold from Kashmir (Fig. 88) which has seeded itself freely, makes a lovely display in the rock garden in spring, as does *Tulipa Celsiana*, which was collected in the Maritime Alps thirty years ago. This is a lovely little Tulip with flat-pointed petals, yellow tinged with red. *Fritillaria pyrenaica* has also made itself very much at home

and its lovely pendulous flowers are a special delight in April. Columbines in a range of blue and mauve have seeded everywhere.

Off one end of the rock garden under the Tulip tree is a raised semi-circular bed built up of stones. This is known as the "snack bar," and here are to be found a collection of treasures. In the lawn there are beds, each of which contains a collection of plants that any good gardener would be proud to have. Some have colonized in a remarkable way. Cyclamen, Anemones, Crocuses, Ranunculus and Violas in variety form carpets and seed themselves in out of the way places where they are allowed to stay.

One of the features of this part of the garden is a small square pool affectionately dubbed "the swimming bath" (Fig. 90). In the margins of the stone coping grows a huge *Saxifraga peltata*, with a great rhizomatous root which is gradually lifting up the heavy stone slabs. An old bush of *Rosa Moyesii* collected by FARRER and a *Daphne Mezereum* are reflected in the water. Behind the pool is a curving shrub border with a quantity of Rhododendrons and a large *Viburnum fragrans*, another FARRER plant, which flowers remarkably well in spite of the heavy shade. Outstanding is a dark form of *Rhododendron reticulatum* underplanted with dwarf Narcissi and Jonquils. *Thlaspi cordifolia* makes a particularly lovely carpet under a large-leafed Skimmia from Myddelton House (Fig. 87).

The orchard, exceptional in its originality and charm, lies to the north-east of the house on gently sloping ground, bounded at the top by a bit of woodland. On one side it is separated from the vegetable garden by a row of widely spaced trees including Sorbus, Oak, Pine and Cypress and beyond by a row of Cobnuts; on the other, from a field by a wide shrub border backed by a Beech hedge and containing *Cotoneaster lactea*, *Hydrangea villosa*, *Viburnum tomentosum*, *V. fragrans*, flowering Crabs, Lilacs, Philadelphus, Escallonias, Azaleas and Bamboos which supply the plant stakes for the garden. *Daphne Blagayana* has crept about in the shadows and *Roscoea cautleoides* is just one of many interesting smaller plants.

The carefully selected fruit trees, a total of about twenty-four, are planted diagonally down the gentle slope. These have been pruned and groomed through the years so that today they are beautiful in their maturity. At the base of each is a circular bed of Daffodils, usually one variety to a bed but in some there are several. A few beds are devoted to Polyanthus. When Daffodils are lifted they are not replanted in the same bed for a period of three years to avoid disease. This rotation of plants is a useful hint for all gardeners. The grass is mown, the beds are edged, and the whole orchard is as carefully kept and as decorative as the rest of the garden (Fig. 86).

The late MR. E. A. BOWLES often talked of this garden and regarded it as one of the most interesting in the British Isles. He admired the selection of choice plants and the high standards of cultivation as well as the design which incorporated so many different features in a relatively small area.

A NEW PRIMULA FROM NEPAL

W. Wright Smith, F.R.S.
and H. R. Fletcher, D.Sc.

IN 1952 the British Museum (Natural History) and the Royal Horticultural Society jointly sponsored an expedition to Western Nepal. The members of the expedition were MR. O. POLUNIN, MR. W. R. SYKES and MR. L. H. J. WILLIAMS, and the latter has told the story of the expedition in this JOURNAL (vol. LXXVIII, p. 323, 1953). Although the main exploration area was to the north-west of the Dhaulagiri Range, subsidiary collecting areas extended into the main Himalayan Range and into the minor ranges. In one of these areas, that around the Phoksumdo Tal Lake in the main Himalaya, the collectors discovered a new species of Primula which is now in cultivation in some British Gardens as a result of the living plants which were flown to Britain, and of the seeds which were harvested. It is a beautiful plant which has been named in honour of RAMZANA, a Kashmiri who was employed by the expedition as collector and who had accompanied LUDLOW and SHERRIFF on all their expeditions and had been trained by them as a collector.

Primula Ramzanae is a dwarf perennial which, at the apex of a short fairly stout rhizome forms a winter resting bud, sometimes a little over half an inch long and covered with scales which are stained with dark purple at the tip. From these resting buds the leaves and the flowers develop simultaneously. Including the purple-tinged petioles the leaves when fully mature are up to 4 inches long with the ovate to orbicular blade $\frac{1}{2}$–$\frac{2}{3}$ inch long and broad, round at the apex, heart-shaped at the base, deeply toothed at the margin, dark green and shining above and either completely covered below with white meal or mealy only in the region of the marginal teeth. The sweetly scented flowers, arranged in a loose umbel with up to nine flowers to the umbel, are carried on a purple-tinted scape which grows to a height of 3 inches. Varying in colour from pale to deep purple, but always with a yellow eye surrounded by a narrow zone of white, the heteromorphic and conspicuously annulate corolla is $\frac{3}{4}$ inch to a little over an inch across the limb. The corolla lobes are obovate and deeply emarginate whilst the narrow tube is twice the length of the calyx which is thickly plastered with white farina within and is divided almost to the base into narrowly oblong lobes. In thrum-eyed flowers the stamens are inserted in the middle of the corolla-tube and near the base of the tube in pin-eyed, whilst the long style is only slightly longer than the calyx and the short style only half this length (Fig. 95).

The nearest ally of *P. Ramzanae* appears to be *P. Gambeliana* Watt, a member of the section *Rotundifolia* and known from several localities

in Sikkim, E. Bhutan and S.E. Tibet, and found, once at any rate, in Nepal in 1888. *P. Gambeliana* is a more robust plant with larger leaves and scapes. It is completely efarinose except for the winter bud-scales. *P. Ramzanae* on the other hand has much farina on the lower surface of the leaves and on the inside of the calyx, but the bud-scales are quite efarinose. Usually the corolla-tube in *P. Gambeliana* is longer in proportion to the calyx than in *P. Ramzanae*. Whereas the style in pin-eye flowers almost reaches the annulus in WATT's plant, it is only slightly longer than the calyx in the new species. Moreover the stamens in the thrum-eyed flowers are inserted near the middle of the corolla-tube in *P. Ramzanae* but are inserted near the apex of the tube in *P. Gambeliana*.

When exhibited before the Joint Rock Garden Plant Committee on April 14, 1953, *P. Ramzanae*, under the number *Polunin, Sykes* and *Williams* 3536, received the Preliminary Commendation.

Primula Ramzanae. W. W. Sm. and H. R. Fletcher (Section *Rotundifolia*).

[*Bull. Alp. Gard. Soc.*, 21: 311, fig., p. 308, 1953, *nomen nudum.*]

Species valde affinis *P. Gambelianae* Watt a qua laminis foliorum multo minoribus altius crenato-dentatis subtus farinosis, scapo breviore, antheris in tubo corollino aliter positis divergit.

Planta perennis, gemmam hiemalem solidam ad 1·5 cm. longam formans, rhizomate brevi robusto, radicibus longis multis fibrosis, squamis ovatis vel ellipticis membranaceis efarinosis ad 1·5 cm. longis 5 mm. latis apice atropurpureis valde congestis. Folia cum petiolo 3–10 cm. longa; lamina 1–2 cm. longa 0·5–1·5 cm. lata, late ovata vel orbicularis, apice rotundata, basi cordata, altius crenato-dentata, infra omnino albo-farinosa vel nunc solum apud dentes; costa atque nervi laterales 4–6-paria subtus conspicui; petiolus 3–7-plo lamina longior, saepe purpureo-tinctus, gracilis basi vaginatus. Scapus cum foliis coetaneus, ad 8 cm. longus, purpureo-infusus, efarinosus, 2–9 flores fragrantissimos umbellatim gerens; bracteae 1–1·5 cm. longae, lineares vel lineari-lanceolatae, apice acutae; pedicelli 1·5 cm. longi. Calyx cylindrico-campanulatus, 5–8 mm. longus, in lobos anguste oblongos acutos vel obtusos intra dense albo-farinosos fere ad imum fissus. Corolla heteromorphica pallido-purpurea nunc saturatius, oculo flavo albo-cincto, anulo conspicuo 5-lobato; tubus anguste cylindricus calyce duplo longior; limbus 2–3 cm. diametro lobis obcordatis alte emarginatis. Stamina antheris 1·5 mm. longis ad medium tubum corollinum in floribus brevistylis inserta, in floribus longistylis in dimidio inferiore visa. Stylus nunc calyce paulo longior, nunc ad medium calycem attingens. Capsula cylindrica 1½–2-plo calycem superans, valvis longitudinalibus dehiscens.

NEPAL:—Nahure. Alt. 17,000 ft.; on cliffs and scree slopes where there is abundant surface moisture; 27. VI. 52. *O. Polunin, W. R. Sykes & L. H. J. Williams* 42—*type* in Herb. Brit. Mus.

Phoksumdo Tal. Alt. 14,000 ft.; short grassy slopes near the snow, in ravine, scarce; 9. VI. 52. *P. S. & W. 2191.* Near Basia Bhanjyang, south-east of Phoksumdo Tal. Alt. 14,500 ft.; dryish slopes facing south, exposed positions among rocks; 13. VI. 52. *P. S. & W.* 2214. Ringmigaon, Phoksumdo Tal. Alt. 15,500 ft.; growing on stony slopes, in fruit; 21. IX. 52. *P. S. & W.* 3536.

PLANTS AND PROBLEMS—VIII

ERADICATION OF MOSS

Question. Can you please tell me how Moss can be eliminated from a lawn?

Answer. Moss is a difficult plant to control and no one specific operation can be recommended for its eradication; it is really a matter of a variety of operations intelligently applied.

Where Moss is firmly established in large patches it can be eradicated by the application of 5 per cent. tar oil spray, or dressings of ¼ to ½ oz. of iron sulphate per sq. yard mixed with sand as a carrier. A further recommended control is the watering of any infected patches with 3–4 ozs. of potassium permanganate dissolved in a gallon of water. In addition, there are a number of proprietary eradicators, and although many of these are most efficient, their use is not a cheap method of control. Following the destruction of Moss by any of these means, it is usually necessary to rake off the dead patches especially where the plant has become well established.

If the occurrence of Moss is due to infertility, and this is very often the case, the lawn should be top dressed with the following mixture:

3 parts of loam
1 part of leaf soil or fine granulated peat
1 part of sieved garden compost
1 part of coarse sand.

This should be applied in the early spring and, if the turf is thin, with sufficient Grass seed added to it give 1 oz. of seed per sq. yard. In conjunction with this treatment it will be found that the lawn will respond favourably to one or two applications of a balanced lawn fertilizer during the following summer.

On very acid soils—and there are not many such soils—a light application of lime will sweeten the ground and discourage Moss. It is important to remember, however, that too much lime will kill fine Grasses, besides encouraging the appearance of new weeds which will create further problems of control. If there is any doubt at all as to whether or not to apply lime do not, unless recommended to do so by a competent authority.

PRUNING A LAVENDER HEDGE

Question. In my garden is a short hedge of Lavender which has grown straggly and encroaches on to the path. Can I safely cut this back after flowering?

Answer. No, it is not safe to cut back a Lavender hedge in the summer. After flowering the bushes may be trimmed lightly and any severe reductions in the size of the bushes left until the spring. If the bushes are cut back late in the year they are liable to frost damage, while if cut back in the spring new growth will have a chance to harden before the onset of winter.

MAKING AN ASPARAGUS BED

Question. Please can you give me a few details on the making of an Asparagus bed.

Answer. For the cultivation of Asparagus it is essential to have a site on which the soil is in good heart, free from perennial and annual weeds and with first-class drainage. Where choice of soil is possible a sandy loam is to be preferred. In order to prepare for Asparagus it is usual to grow Potatoes in the year previous to planting. Follow this crop by double digging the site in the autumn, incorporating a generous dressing of farmyard manure or well-rotted compost.

If you intend to raise your own plants from seed it should be sown in drills 2 inches deep in April. The seedlings are thinned to 4 inches apart and encouraged to grow freely by constant hoeing and watering when necessary. The bower should be cut to the ground in the autumn. If desired crowns may be purchased.

Planting should be done in March or April with crowns which are either one or two years old. The crowns may be set out either in the single row or in the bed system. The single row system, useful where mechanical cultivators are used, consists of rows 4 feet apart with crowns 15–18 inches apart in the rows. In the bed system a bed 5 feet wide is planted with three rows of crowns spaced 15 inches apart in the rows. The beds should have a 2-foot alleyway between them.

As, when planting, great care should be taken to ensure that the roots do not dry out, they should be kept in a box which is covered with damp sacking. To plant, take out a trench 6 inches wide and 6 inches deep with a slight ridge in the middle. Spread out the roots carefully on each side of the ridge and then cover the crowns with 3 inches of soil.

For the first year keep the soil well cultivated and in the first spring after planting fill in the trench and give a top dressing of 3 ozs./sq. yard of sulphate of ammonia. In the second year after planting give a dressing of

1 part nitrate of soda 2 parts superphosphate 1 part sulphate of potash	At 6 ozs./sq. yard and repeat this dressing annually in the spring.

A light cut may be taken in the second year after planting. When cutting finishes give a dressing of 4 ozs./sq yard of sulphate of ammonia.

Suitable varieties for garden cultivation include:

"White Cap"	"Kidner's Pedigree"
"Argenteuil"	"Connover's Colossal"

THE TARNISHED PLANT BUG ON DAHLIA

Question. I would be grateful if you would let me know what is attacking my Dahlias. There are small holes in the leaves which are wrinkled and distorted.

Answer. The damage has been caused by the Tarnished Plant Bug, *Lygus pratensis*, which causes distortion and malformation of buds and foliage on various plants, especially Dahlias and Chrysanthemums.

The attacks commence in June and July and are liable to continue until the autumn. Infested plants should be sprayed with DDT according to maker's instructions at three-weekly intervals from June onwards. It is advisable to direct some of the wash to the base of the plants since the bugs readily fall to the ground when disturbed.

GLADIOLUS THRIPS

Question. Can you tell me what is wrong with my Gladioli? The leaves are silvery and the blooms are shrivelled and blotched.

Answer. The blotching and silvering are typical signs of attack by the Gladiolis Thrips, *Taeniothrips simplex*. The small black adults and yellow larvae may be found in large numbers in the more protected parts of the plant such as between the leaf sheath and beneath the flower bracts.

Since the adult female thrips overwinter on the corms, we recommend that the loose scales be removed and the corms dusted with 5 per cent. DDT dust before storing. In spring, when the plants are about 6 inches high, they should be examined for the first signs of silvering on the foliage and if an attack is developing the plants should be sprayed with BHC according to maker's instructions. The treatment should be repeated at three-weekly intervals during the summer to cope with fresh invasions from unsprayed plants in the vicinity.

TOMATO BLIGHT

Question. Is it true that Potato Blight attacks Tomatoes and if so how is it prevented?

Answer. The fungus parasite which causes Potato Blight also attacks Tomatoes. The signs are dark brown spots on the leaves or even brown patches on the stems, while the green fruits also show brown patches and soon rot. In wet muggy weather the disease spreads with great rapidity. The remedy is to spray the plants as soon as they

have been "stopped" after the third or fourth truss. The spray to use is colloidal copper plus a spreader, and in the south-east one good spraying will protect all fruits likely to be picked ripe. For the upper fruits which may be needed for chutney or ripening indoors a second spraying can be done a few weeks later. In western districts two sprayings are necessary—the first being much earlier than in the eastern counties where the first application is usually made about the first week in August. This treatment should be considered a routine operation for outdoor Tomatoes.

LILY DISEASE

Question. My Lilies have had Botrytis disease. Is there any need to destroy the bulbs?

Answer. There is no need to destroy the bulbs of Lilies which have suffered attack by the Lily Disease fungus (*Botrytis elliptica*). Where this disease is feared, and especially in wet and cold seasons, the plants should be sprayed with a colloidal copper spray plus a spreading agent early in the season and certainly by the time the flower buds can be distinguished. This treatment can be repeated if thought necessary but the bulbs are not attacked and can be safely retained.

PRUNING BLACKBERRIES AND LOGANBERRIES

Question. Early last year I planted some Blackberry and Loganberry canes. These are now established and the plants are fruiting for the first time. Can you please advise me when and how to prune them?

Answer. Blackberries and Loganberries should be pruned as soon as they have finished fruiting. Pruning simply consists of cutting out old fruiting canes and tying the new ones to the wires or posts. Where space permits it is best to adopt one of several methods by which room is always left for the immediate tying in of young canes as they develop. One way is to train all this year's canes to one side leaving the other side free for those produced next year; alternatively this year's canes can be trained out horizontally on either side leaving an open centre for filling in next year. Whichever method is used it saves time as the young canes can always be tied direct into their fruiting positions which will automatically alternate year by year. Only the strongest canes should be used and they should be spaced 9 inches to 1 foot apart.

PICKING EARLY PEARS

Question. I have a number of Pear trees in my garden which crop well and regularly. Several early varieties are included and I should like your advice as to when these should be picked, particularly 'Laxton's Superb' and 'William's Bon Chrétien.' I appreciate that such early varieties keep only for a few days after being picked, but

in spite of using them immediately many of mine always appear over-ripe.

Answer. Time of picking is very important with Pears, particularly the early ripening varieties. Although the general guide is to pick when the fruit parts easily from the tree on being lifted and given a gentle twist this is too late for varieties such as 'Laxton's Superb' and 'William's Bon Chrétien.' If picked at this advanced stage a large percentage of fruits will be found to have gone "sleepy" in the centre, the outside remaining hard. For such varieties it is best to pick a few days before they reach maturity whilst the fruit is still green and hard. Thus 'Laxton's Superb' will be ready to pick around the second or third week in August and 'William's Bon Chrétien' at the end of August. It must be stressed, however, that time of picking will vary with locality, site and season. Moreover, past experience, together with the knowledge of whether it is an early, normal or late season should be used in assessing this. Immediately they have been gathered the Pears should be laid out singly on trays or shelves in a cool room where they should ripen in a few days.

NOTES FROM FELLOWS

A Pioneer Pomologist

TOWARDS the end of the eighteenth century a certain LEONARD PHILLIPPS, Jnr., established, what he claimed to be, the largest collection of hardy fruit varieties ever assembled. The stated object was to clear up the muddle and confusion which existed in the nomenclature of hardy fruits. The trees were situated "upon about six acres of ground in the Portsmouth road, about a quarter mile beyond Vauxhall Turnpike."

In the year 1812 he published a catalogue of this collection, at which time the trees were in bearing and from seven to upwards of twenty years old. The catalogue was available through several London seedsmen at 2*s*. each. The public were invited to inspect the collection in order to see for themselves the characters of the different varieties.

PHILLIPPS was not the first British pomologist to plant fruit variety trials, nor by comparison with some of the later workers is he the most distinguished, but his work is not without interest after the passing of a century and a half. His collection preceded that of the Horticultural Society of London (later The Royal Horticultural Society) at Chiswick by about twenty-five years and there is no doubt that ROBERT THOMPSON, who had charge of the Chiswick fruit found PHILLIPPS' work of much help.

The catalogue has its lighter moments. The public are sternly informed that "Every Person therefore that enters these Grounds is, subject for Gathering or Touching the Fruit or Trees or for Walking

upon any part of the Grounds than the Paths which are marked out, or for Walking upon these Paths in a Contrary Direction to which is appointed out, to pay to the Proprietor the Sum of One Hundred Pounds to be by him paid to the National Fund at Lloyds." Surely a remarkable piece of regimentation for one who was trying to sell fruit trees.

For his efforts The Society of London for the encouragement of Arts, Manufactures, and Commerce awarded PHILLIPPS their Gold Medal and there is little doubt that it was well merited.

Every worker in the field of fruit nomenclature sooner or later arrives at the stage when the mass of names with inadequate descriptions and superfluous synonyms gets the upper hand and he feels the urge to wipe the slate clean and start afresh with a new set of names. PHILLIPPS is unique in that he alone had the courage to act on his conviction. For in a later edition of the catalogue (1814), he expressed himself so dissatisfied and overwhelmed by the confusion that he renamed all the varieties in the collection after illustrious persons and hoped that this would mark the beginning of a National Standard Appellation for English Fruits.

Fortunately for those who have followed, PHILLIPPS' recommendations were not taken to heart by other pomologists, for the new set of names does not appear to have been used by any subsequent writer and they do not even enjoy the rank of synonyms.

Although we may condemn PHILLIPPS' ostrichlike way of dealing with the problem we must nevertheless give him credit for his honest endeavour to standardize the names of cultivated fruits.

Now that we have an International Code for the naming of cultivated plants we may perhaps hope that when PHILLIPPS' catalogue celebrates its bicentenary, the pomologists of that day will be able to point with pride to a universally accepted list of names of fruit cultivars with descriptions and illustrations which leave their identity in little doubt. Who knows ?

The author is indebted to the staff of the Lindley Library of The Royal Horticultural Society for access to the catalogues which form the basis of this article.

R. W. SIDWELL

Ashton under Hill,
nr. Evesham, Worcs.

Potato Varieties

The article "Potato Varieties—Old and New" was of much interest and there is something about the Potato which encourages that "I remember the time . . ." type of conversation and thought. A few notes from North Scotland may be of interest as follow:

Whilst Scottish people demand a white-fleshed late Potato, earlies are preferred yellowish for some reason. 'Duke of York' is taken as the standard of comparison for all others, and popular is the 'Red Duke'

which sprouts more rapidly, tastes the same and is ripe about ten days earlier. Stocks of these are gradually being built up in isolated areas.

'Sharpe's Express' is being grown more as a commercial first early because of heavier cropping. It seems to have been a hobby amongst the farmers three or so generations back to grow new varieties of Potato and a surprising number of these still exist, and one forever meets people who have a Potato completely unknown elsewhere, and many of these are good and might well be worth investigating. It would be interesting to know if other areas are similar in this respect.

'Dobbie's Russett' is a favourite second early in this area along with 'British Queen,' and before the last war, 'Priory Queen' was grown here and there. One still finds 'Blacksmith,' 'Arran Victory,' 'Edzel Blue,' 'Fortyfold' and such like.

'Catriona' and 'Di Vernon' have NOT dropped out of cultivation. The former is in considerable demand amongst small gardeners although some soils do not make a job of it and at times there is trouble with the seed Potatoes rotting in the ground. 'Di Vernon' does not have this trouble and grows a very heavy crop of large, good quality Potatoes, many of them being in the 'monster' class with weights of up to 2 lb. each, according to soil.

'Epicure' is grown mostly in Ayrshire and the story is that this variety is grown because it can be grossly over-fed with artificial manures, resulting in a large crop of poor quality " watery" Potatoes.

'Home Guard' was grown extensively by small gardeners for one year only and the following year retailers who stocked up were left with many on their hands, customers declaring that the Potatoes were quite uneatable.

In December I tasted 'Sharpe's Express' which, although starting to sprout, were of as good quality as 'Kerr's Pink,' but this is very uncommon indeed, possibly because it has not been tried before.

People are still to be found who insist that 'Midlothian Early' is a different and better Potato than 'Duke of York.' They grow them side by side and continue to insist thus, despite the fact that they get both from the same sack of seed.

'Golden Wonder' is in huge demand as a late Potato in the shops, but farmers grow few as they state that 'Kerr's Pink' gives a bigger crop; this despite the fact that 'Golden Wonder' command a far higher price and Pinks are often difficult to sell, large amounts ending up dyed purple for pig feeding. 'Kepplestone Kidney' is grown sometimes but is dying out.

Scottish people regard the typical English late Potato as being suitable only for potato-chip making, being far too wet when boiled, but on the other hand, Scottish " quality" varieties absorb an uneconomical amount of fat as chips, but 'Kerr's Pink' is blameless in this respect.

R. A. B. COOK

57 High Street,
Banff, Scotland.

Valuable Trace Elements in Domestic Chimney Soot

Our gardening grandfathers used *soot* because it gave results. Onions grew bigger and better, Runner Beans grew longer and their foliage stayed greener when the soot bag was suspended in the liquid manure tank. Did soot contain ingredients of a special nature to account for these splendid results? Then the scientific horticulturists confirmed that soot contains *nitrogen*.

I garden on soil which twenty-five years ago was dry, acid, hungry, sandy, heather-covered common land. Apart from poverty of humus and major plant nutrients this soil has special problems connected with trace deficiencies of mineral elements.

I will not go fully into all the experiments I have carried out during recent years in connection with the removal of deficiency symptoms in growing plants. As my guide I used PROFESSOR T. WALLACE's book *The Diagnosis of Mineral Deficiencies of Plants by Visual Symptoms*.

My soil lacks magnesium, manganese and iron. At least it lacks these in sufficient quantities in available form. I got excellent results by spraying the foliage with manganese sulphate, magnesium sulphate and ferrous sulphate, when visual symptoms indicated the need of such treatment. Diagnosis was confirmed when symptoms disappeared.

Then I made a discovery. Liquid manure containing soot appeared to supply these trace elements just as satisfactorily. I use it as follows:

My liquid manure tank is an old iron copper sunk into the ground up to the rim and covered with a board. In it is suspended a bag of mature compost and a bag of soot which weighs about 7 lb. Both compost and soot are renewed when 15 gallons of liquid feed has been drawn off. Liquid feeding is carried out immediately after rainfall, or artificial watering during dry spells. The 8-foot-tall Tomato plants which yielded 18–19 lb. per plant out of doors last year were given 2 pints per plant at weekly intervals from June until August.

An amateur gardener, I lack facilities for a full-scale controlled scientific experiment to follow up my discovery, but I have obtained some most interesting facts from Mr. A. C. Monkhouse, B.Sc., Ph.D., F.R.I.C., the Assistant Director of Research, The Fuel Research Station, Greenwich. On August 27, 1953, he wrote to me: "I have no doubt that the ash of coal does contain iron, magnesium and many other trace elements." On December 7, 1953, Mr. Monkhouse wrote: "Earlier this year you wrote asking for information concerning the trace elements present in soot and its possible use for counteracting deficiencies in soils. We have recently had an opportunity to make a study of the minor elements present in two soots from domestic fires and have obtained data for the elements cobalt, calcium, copper, iron, magnesium, manganese, molybdenum and zinc, all of which may perhaps play some part in plant nutrition."

I wonder how this "Note" ties up with that of MAURICE AMSLER on "Coal Ashes as a Growing Medium" in the May 1952 JOURNAL (p. 174)? I think it more than likely that the increased vigour of his Lilies, and those of CANON ROLLO MEYER, was due to trace elements supplied to the bulbs by the coal ashes.

RAYMOND BISHOP

ROOTING CUTTINGS IN VERMICULITE (ACID GRADES)

S. R. Mullard, M.B.E., M.I.E.E.

IN my experience the chief cause of failure in the successful rooting of both soft and hardwood cuttings is the damping-off or rotting away of the end of the cutting, which, starting at the tip, rapidly spreads upwards, causing the foliage to drop and rendering the cutting useless.

Repeated inspection has shown that the foliage fades and drops very quickly after the end of the cutting shows the first signs of decay (damping off). It appears that this damping has the effect of sealing the cuttings from any further uptake of moisture. This is particularly noticeable with leaf and bud cuttings.

In some recent experiments, using acid vermiculite as compost, and designed to avoid rot damage at the end of the stem, we found that only the tip should make contact with the water-saturated vermiculite. Watering or spraying of the surface must be avoided. To meet these requirements a box 5 inches deep was rendered water-tight with roofing felt, and a size 60 pot to sub-irrigate with water when required was placed on a few small pebbles in the centre.

The box was then filled round the pot with vermiculite to a depth of 4 inches. This was levelled without crushing and with only very slight pressure. The surface was then covered with dry silver sand, the depth depending on the type of cuttings; leaf and bud cuttings will only require $\frac{1}{4}$–$\frac{1}{2}$ inch. The sand served as a support to the cuttings and kept them dry above the point of contact with the saturated vermiculite below.

In planting, the cuttings are easily passed through the loose dry sand and contact with the wet vermiculite is immediately felt by the increased resistance.

In the past two seasons cuttings of Camellias taken in September have yielded 100 per cent. strikes and have rooted after three months—in early December. Trials in other composts have resulted in several failures from stem-rot.

From the date of taking, the cuttings showed no sign of flagging nor did any lose their leaves. Stem cuttings with several leaves made

excellent roots and started new growth after transplanting to soil compost. An examination of the cuttings showed that as the supply of moisture in the vermiculite lessened, the formation of the callus and roots was hastened. It was as if the tip reached out in an effort to obtain further supplies of moisture for its survival. Another feature was the uniformity and even distribution of the roots round the base of the cutting.

Trials were also made with Rose 'Mermaid' and although failures occurred in one box due to the sand layer being wetted, the results from another box were satisfactory with 80 per cent. rooting.

To obtain a close-up view of the action at the end of the cuttings a box was prepared as described above and two-thirds filled with water-saturated vermiculite. A twine mesh with ½-inch squares was formed across the top of the box and cuttings of Chrysanthemums, perpetual-flowering Carnations, Fuchsias and Geraniums were dropped into the squares with their ends resting on the surface of the vermiculite. The square mesh formed by the twine kept the cuttings upright. No covering of sand was used. The cuttings showed little sign of flagging and all except the Geraniums rooted in three to four weeks. The root system developed evenly round the base with no sign of decay at any point. All the Geraniums callused and some had started to show roots while a few of those without roots showed a few small spots of decay. None of the foliage was lost from any of the cuttings, rooted or unrooted, except some Fuchsias of rather hard wood, but these also rooted after shedding their lower leaves.

From these experiments it would appear that surrounding cuttings with a damp medium tends to lengthen the period of rooting and also promotes damping off, particularly in the case of difficult hardwoods. It would also seem possible that all cuttings, soft or hard, which are subjected to these conditions may later as growing plants, carry with them to a varying degree the effect of rot damage developed before callusing and rooting.

This may in some measure account for the variations in the size of the root systems developed and also the subsequent variations in the growth of the plants and the crop yield. It is also conceivable that even initial or partial damage may leave the base of the stem where the roots emerge more liable to attack by soil-borne diseases and pests.

PLANTS TO WHICH AWARDS HAVE BEEN MADE IN 1954

ORCHIDS

Cattleya (Bob Betts G.) 'Conqueror' F.C.C. March 30, 1954. This outstanding seedling from the cross *C.* 'Bow Bells' and *C. Mossiae* var. *Wageneri* has a flower over 7¼ inches across. The broad ruffled petals are 3¼ inches across at their widest point and like the sepals are clear white and of fine texture. The lip is 2¾ inches across, heavily ruffled at the edges, white with a deep yellow area shaded ochre in the throat. The flower is of excellent substance and very flat. Exhibited by Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells.

Cattleya (Bob Betts G.) 'Phoebe' A.M. March 16, 1954. This is another seedling from the cross *C.* 'Bow Bells' and *C. Mossiae* var. *Wageneri*, which also produced *C.* (Bob Betts G.) 'Snowden' **A.M.** March 2, 1954. This latest cultivar has a flower 6 inches across and is similarly coloured to its predecessor, i.e. sepals and petals clear white with an ochreous yellow area around the centre of the lip. This cultivar has a much flatter appearance than the previous one, and it also has two characteristic very large and rounded lateral petals. Exhibited by Messrs. Armstrong & Brown, Orchidhurst, Tunbridge Wells, Kent.

Cattleya (Bob Betts G.) 'Snowdon' A.M. March 2, 1954. The parentage of this large-flowered cultivar is *C.* 'Bow Bells' × *C. Mossiae var. Wageneri.* The plant exhibited bore two flowers each 6 inches by 6 inches. The sepals and petals are completely white with ochreous yellow suffusing the centre of the lip, thus bearing a strong resemblance to 'Bow Bells.' The rolled upper part of the lip, which protects the column is cream. Exhibited by Messrs. Armstrong & Brown, Orchidhurst, Tunbridge Wells.

Cymbidium (Miretta G.) 'Cherub' A.M. February 16, 1954. *C.* 'Mirabel' × *C.* (Claudette G.) 'Invicta' is the parentage of this attractively coloured Cymbidium. The plant exhibited bore a spike of six flowers each 5 inches by 3½ inches. The sepal and petals are soft pale green with a faint flush of red, which slightly increases towards the centre. The lip is basically white with a faint flush of pink, while the crest is cream coloured. The edge of the lip is heavily marked with deep red, the same colour manifesting itself by spots further inwards towards the centre. Exhibited by Messrs. McBean's Orchids Ltd., Cooksbridge, Sussex.

Cymbidium (Flare G.) 'Dell Park' F.C.C. March 30, 1954. This cross between *C.* (Edzell G.) 'John Linfold' and *C.* (Rio-Rita G.) 'Radiant' has produced a cultivar of unusual richness of colour and of fine substance. The graceful curving spike bore thirteen flowers, 3¼ inches across. The petals and sepals are a rich Chrysanthemum Crimson with heavier veining and the margins of the petals narrowly edged with

greenish buff. The buff lip is marked and spotted with deep maroon-crimson and the column is hooded with velvety crimson. Exhibited by H. W. B. Schroeder, Esq., Dell Park, Englefield Green, Surrey.

Cymbidium (Hyde Park G.) 'Fascination' A.M. March 2, 1954. 'Louis Sander' and 'Mayfair' are the parents of this plant, and the specimen exhibited bore a spike of eight flowers. The sepals and petals are white with faint streaks of mauvish pink. The pink lip is prominently marked with reddish spots, with the general colour becoming lighter towards the centre. The inside of the column is strikingly marked with a series of broken streaks of purple, and in addition the crest is pale yellow. Exhibited by Messrs. Dorset Orchids Ltd., Plush, Dorset.

Cymbidium 'Hawtescens' F.C.C. March 16, 1954. (*C.* 'Lutescens' and *C.* 'Hawfinch'.) This hybrid received an Award of Merit in 1953. The plant exhibited had a spike with nine flowers which measured 4½ inches by 3½ inches. The basic colour of the sepals and petals is bright chrome yellow. The lip has reddish orange markings on a creamy background, with a lemon crest and a dark red column. Exhibited by Messrs. McBean's Orchids Ltd., Cooksbridge, Sussex.

Cymbidium (Carisette G.) 'Peony' A.M. March 16, 1954. The result of crossing *C.* 'Susette' with *C.* (Carisbrooke G.) 'Brilliance,' this cultivar has an unusual colour for a Cymbidium. The sepals and petals are an attractive deep rosy red. The lip has a creamy background with deep reddish markings mainly towards the margin, and dots of a similar colour are liberally sprinkled on the inside of the column. Individual flowers are 4 inches by 2 inches, and the spike bore fifteen blooms. Exhibited by Lt.-Col. The Lord Hothfield, Castle Hill, Englefield Green, Surrey.

Cymbidium (Marmie Kingsford G.) 'Stonehurst' A.M. March 2, 1954. The result of crossing *C.* (Paulwelsii G.) 'Comte de Hemptine' with *C.* (Pearl G.) 'Magnificum,' this Cymbidium has flowers 4 inches by 2½ inches. The sepals and petals are streaked with orange red, which is suffused on to a yellowish background. The base of the lip is cream, and in addition a broad marginal band of rich dark red occurs with a prominent streak of the same colour down the centre. The column is deep reddish. Exhibited by R. Strauss, Esq., Stonehurst, Sussex.

Cymbidium (Alexalban G.) 'The Bride' A.M. March 2, 1954. This is a very large-flowered cultivar and the plant exhibited bore a six-flowered spike with the lowest flowers at least 5½ inches by 4 inches. *C.* (Alexanderi G.) 'Westonbirt' × *C.* 'Albania' produced this plant. The sepals and petals are white with a faint flush of mauve in the centre. The basic colour of the lip is pale suffused pink, on which are superimposed dark red spots. The noticeable column is deep, dull red, while the lip also bears a pale lemon crest. Exhibited by Messrs. Dorset Orchids Ltd., Plush, Dorset.

Cypripedium (Gorse G.) 'Chilton' A.M. February 16, 1954. This large-flowered Cypripedium was obtained by crossing 'Lady Mona' with

'Ann Harper.' The plant exhibited bore a large flower with rather incurving sepals and petals. The flower was 5 inches across by 5 inches deep. The large dorsal sepal is greenish yellow with a broad white marginal band. The lateral petals are a bright greenish yellow, while the lip is a deep glossy yellow, nearly corresponding to Dresden Yellow (H.C.C. 64/1). Exhibited by Messrs. R. & E. Ratcliffe, Downlands Nurseries, Chilton Didcot, Berks.

Cypripedium (Minster Lovell G.) 'Gold Lace' A.M. January 19, 1954. A very large-flowered Cypripedium 6 inches by 5 inches, which was obtained from the same cross which produced *C.* 'Minster Lovell' **A.M.** 1953, namely 'Diana Broughton' and 'Lady Mona.' The large upright dorsal sepal is greenish yellow with a white margin. The lateral petals and the labellum are a clear Dresden Yellow (H.C.C. 64/2). The lower part of the lateral petals is rather paler than the upper. Exhibited by L. W. Brummitt, Esq., 30 Bloxham Road, Banbury, Oxon.

Cypripedium (Guardsman G.) 'Grenadier,' A.M. January 5, 1954. This variety was obtained by crossing *C.* 'King George VI' with *C.* 'Angel Luscombe,' the plant exhibited bore a flower 4½ inches across, by 4 inches deep. A glossy ruby red inside a broad white margin makes a striking combination on the dorsal sepal. The lateral petals are brownish purple superimposed on to greenish yellow. The lip is a glossy ruby red again, although of a rather paler shade than the dorsal sepal. Exhibited by Messrs. Armstrong and Brown, Orchidhurst, Sandhurst Park, Tunbridge Wells, Kent.

Cypripedium (Hornsey G.) 'Magnificent' A.M. January 5, 1954. This plant originated by the cross *C.* 'Euryoston' with *C.* 'Gold Luna.' The dorsal sepal has a white thin margin, with pale yellow inside, while the centre is dark glossy brown. The lateral petals are coloured with brown superimposed on greenish yellow, with darker spots towards the base. The lip is similarly composed of brown and yellow, with the former fading out beneath. Exhibited by K. D. Morgenstern, Esq., 18 Lyttelton Road, London, N. 2.

Cypripedium (Lais G.) 'Stonehurst' A.M. January 19, 1954. This large-flowered variety 6 inches by 5 inches, is the result of crossing *C.* 'Memphis' with *C.* 'Edenbridge.' The purplish maroon dorsal sepal deepens to a dark glossy brown in the centre of the base. An irregular white border is also present. The lateral petals are composed of yellow overlaid by brown, with the latter giving a distinctly tessellated effect. The labellum is unusually dark for a Cypripedium of this type, being more or less uniformly covered with deep purplish brown. Exhibited by R. Strauss, Esq., Stonehurst, Sussex.

Cypripedium (Langtye G.) 'Veridian' A.M. January 5, 1954. The parentage of this bright, almost self-coloured Cypripedium is *C.* 'Mongolia' and *C.* 'Ophelia.' The upright dorsal sepal has a broad white margin and a bright greenish yellow centre. The lateral petals are a handsome Sulphur Yellow (H.C.C. 1/1), while the lip is of the same colour but even brighter and more glossy. The flower measures

5 inches by 3½ inches Exhibited by Messrs. Stuart Low & Co., Jarvis Brook, Sussex.

Cypripedium (Arctic Prince G.) 'Wyld Court' A.M. January 5, 1954. This large-flowered hybrid was obtained by crossing *C.* 'Regent' with *C.* 'Etta.' The plant exhibited bore a flower 5 inches by 4 inches. The large upright dorsal sepal has a white background, on which are a number of dark purple blotches. The centre is flushed with green. The lateral petals are a glossy purplish red, while the lip is similar but progresses towards a greenish shade beneath. Exhibited by Sir W. Cooke, Bart., Wyld Court, Hampstead Norris, Newbury, Berks.

Odontioda (Ruby Glow G.) 'Stonehurst' A.M. January 19, 1954. *Odontioda* 'Francis' with *Odontoglossum* 'Goriza' gave rise to this large-flowered variety, each flower being 3 inches by 3 inches. The plant exhibited bore a spike of four flowers. The sepals and petals were basically coloured with Magnolia Purple suffused with dull red. The tips and fimbriated margins are pale heliotrope. The lower portion of the labellum is clear white while the upper is heavily marked with the basic colour, with an additional tinge of yellow on the crest. Exhibited by R. Strauss, Esq., Stonehurst, Sussex.

Odontoglossum 'Jennifer' A.M. March 30, 1954. (*O.* 'Omega' × *O.* 'Sheila Stephenson'). The spike of fifteen flowers closely and evenly spaced made a fine display. The individual flowers are 3¾ inches across and flat. The sepals and petals are Pansy Purple overlaid with bronze, margined and flecked at the fimbriated edges with white. The labellum is also Pansy Purple, with an irregular white margin flecked and spotted purple and a deep yellow crest. Raised and exhibited by Messrs. The Dorset Orchids Ltd., Plush, Dorset.

Odontoglossum (Crispania G.) 'Stonehurst' A.M. April 13, 1954. The nine outward facing flowers arranged on two sides of the stalk made an unusually effective spike. Each flower was 3½ inches in diameter, sulphur yellow with paler bands of cream on the petals and a greenish brown flush on the outer half of the sepals. The sulphur yellow labellums showed brown banding and spotting and a few spots of the same brown in varying sizes were irregularly scattered over the petals and sepals, both of which were fimbriated and slightly ruffled. The result of crossing *O. crispum* with *O.* 'Ascania.' Exhibited by R. Strauss, Esq., Stonehurst, Essex.

Odontonia (Atheror G.) 'Lyoth Majesty' A.M. March 30, 1954. This seedling, the result of crossing *Miltonia* 'Athene' and *Odontoglossum* 'Alperor,' bore an erect spike of six flowers 4 inches in diameter. The fimbriated sepals and petals are pale lilac flushed and mottled with light purple and blotched with large areas of maroon. The labellum is white shaded pale yellow and overlaid in the centre with rich maroon. Raised and exhibited by Messrs. Charlesworth & Co. Ltd., Haywards Heath, Sussex.

Phalaenopsis (Grace Palm G.) 'Easter Parade' F.C.C. March 30, 1954. A seedling from the cross *Phalaenopsis* 'Doris' and *P.*

'Winged Victory,' with flowers of exceptional size and substance. The spike (unfortunately slightly damaged in transit) of seven flat flowers was well spaced and graceful. The individual flowers are over 4½ inches across and of purest white. The petals are broad and beautifully formed. The labellum is white with side lobes edged corn yellow at the base and striped with carmine above. The column is white flushed pink. Raised and exhibited by Arthur Freed, Esq., Country Acres, Malibu, California, U.S.A.

Vanda teres var. alba magnifica F.C.C. March 2, 1954. This variety of *Vanda teres* has very large white flowers and originates from Burma and the adjoining areas of north-east India. The flowers are 4 inches by 3½ inches. The sepals and petals are clear white and a flush of very pale yellow occurs inside the short tube formed by two lobes at the base of the lip. Exhibited by Dr. M. J. Dijkman, 4013 Douglas Road, Miami, Florida, U.S.A.

BOOK NOTES

"Practical Lawn Craft and Management of Sports Turf." By R. B. Dawson. 320 pp. Illus. (Crosby Lockwood.) 21*s*.

It seems especially appropriate that the Director of the Sports Turf Research Institute of Bingley, Yorks, should issue the Fourth Edition of this most valuable work in the Silver Jubilee year of that unique organisation.

Since it was first published in 1939 it has been indispensable on the book shelves of those who seriously concern themselves with the cultivation of turf. It is indeed the voice of authority on these matters. The general format and purpose of the book remains the same, but up-to-date information has been written into the text. Its approach to the subject is scientific and goes a very long way to achieve its avowed intent—"to distinguish supposition from certainty and provide information based on experiment or well-founded practical experience."

I would have preferred to see a more suitable watering can in Fig. 30 than the drip-making ironmongers' variety there shown. Bowling green dimensions in the text do not agree with those adopted by the International Bowling Board in 1946, whilst the purpose of the diagram on page 305 of a bowling green still remains a puzzle which might have been elucidated by an explanatory note.

The chapters on the management of sports turf are excellent. They might serve an even more useful purpose if more practical detail were included. Many young groundsmen consult these pages and, whilst it is indisputable that there are wide divergences of opinion, one good method of performing such operations as preparing a cricket pitch or the autumn cultivation of a bowling green would add most materially to the great help they already receive.

If you have a problem concerning the production of a new lawn, or the maintenance of established turf, you cannot do better than consult the advice you will find in these pages. If you do not find help then you will indeed have an unusual and intractable problem and would be well advised to have the direct attention of Bingley centred upon it by joining their list of contributors.

J. R. B. EVISON

"Soil." By G. V. Jacks. 221 pp. Illus. (Thomas Nelson & Sons Ltd.) 12*s*. 6*d*.

Good books about the soil are surprisingly rare considering the importance of the soil for the growth of plants, so any new book on the subject will always receive a ready scrutiny. The author of this book has set out to provide an up-to-date account of our knowledge primarily for agricultural students, farmers and foresters, so that the

horticulturist and gardener will find some problems discussed of little direct importance to him, and some problems of great importance, for example the problems of maintaining soils in a very high state of fertility, not discussed in quite the detail he would like.

This book presents a very readable and reasonably reliable account of the principal properties of the soil as they affect plant growth, and gardeners will note with pleasure the very great emphasis the author lays on considering soil fertility to be almost more a problem in biology than chemistry, for he is continually showing how the changes brought about in the organic matter added to the soil by living organisms, including the gardener himself, control those properties which go to make up a fertile soil. Although a number of statements made in the book will not be accepted by all soil scientists, yet this book can be recommended as one of the best and most up to date for anybody interested in the subject. It is certainly excellent value for only 12*s*. 6*d*. at present-day prices.

E. W. RUSSELL

"Plants for Man." By Robert W. Schery. 564 pp. Illus. (George Allen & Unwin, Ltd.) 70*s*.

This volume is an introduction to the wide fields of Economic Botany, written by an American and consequently tending to emphasize the part played by plants in the American economy, although universal in scope.

The author admits that "no one volume—no one lifetime—is sufficient to discuss all the ramifications that might arise from a discussion of plant products." Nevertheless, he has succeeded in gathering together an almost encyclopædic collection of interesting information and yet avoiding dictionary dullness of style. Timbers, fibres, latex, pectins, gums, resins, tannins, dyes, oils, medicinals, insecticides, waxes, sugars, starches, food and beverage plants; there is surely something in this book to interest every reader. Most of the important economic plants and plant products of the world are at least mentioned. The author has not confined himself to old and well-tried subjects. He discusses plant products which are still in their infancy, relatively speaking, such as compressed and resin-impregnated modified woods, modern chemurgic products of wood hydrolysis, carbohydrates to be used as food for fodder yeasts, and the alga *Chlorella* as a potential source of both food and fuel.

The value of the book is, on the whole, enhanced by its 335 photographs, 19 maps and several line drawings, although the reproduction of some of the photographs is unsatisfactory and one may regret the absence of scales or other means of indicating the size of individual plants or plant products. The vexed question of nomenclature has been evaded by the omission of authorities, and the somewhat inconsistent use of synonyms. Serious students will also regret the paucity of references.

S. G. HARRISON

"Intermediate Botany." By L. J. F. Brimble. Revised and rewritten by S. Williams and G. Bond. 490 pp. with 407 figs. (Macmillan & Co. Ltd.) 20*s*.

This book now reappears in its 4th edition, having been recently revised and rewritten. New subject-matter has been included as botanical science has developed; the section dealing with virus diseases and plant viruses illustrates this point. For this edition the author has enlisted the help of collaborators with considerable experience in University teaching, and they have undoubtedly strengthened the text by the inclusion of further subject-matter relating to the structure of flowerless plants, including ferns and mosses, lichens and algae, and relating to the life cycle of such plants. Many new illustrations are also provided. Much of the book should prove of value to students studying for the National Diploma in Horticulture. Generally students will quickly recognize an old friend in a new coat; but the cultivation of plants is not the primary concern of a course in botany and there is still a real need for an intermediate textbook in Horticulture.

M. A. H. TINCKER

"The Gibbaeum Handbook." By the late G. C. Nel. Edited by P. G. Jordaan and E. W. Shurly. 8vo. 117 pp. Illus. (Blandford Press.) 21*s*.

This attractive handbook is just the type needed to win further converts to the South African Flora. Its arrival sent me scurrying to check over my own few *Gibbaeums* with the same enthusiasm that many other succulent growers will share.

Professor Nel is already familiar to readers through his larger work on *Lithops*

(1946). On his death in 1950 he had nearing completion a companion work on *Gibbaeum*, but tantalizing fragments remained unwritten. The editors who undertook the unenviable task of preparing the manuscript for publication went as far as they could, but without prolonged research there are bound to be gaps and inconsistencies which doubtless would not have appeared in the final version. Extremely valuable is the chapter on field studies and geographical distribution, and the key in which the number of recognized species is reduced to 16. Descriptions of these species range from 6½ pages to 9 lines in length: Nel's latin descriptions for 7 of the species are included. The illustrations greatly enhance the book: the 7 coloured plates are more lifelike than those of the *Lithops* book, and the remainder include habit photographs and superb line drawings of fruit structure. The presentation is clear and attractive, and the publishers have given us a worthy addition to the literature of succulents.

I am surprised to find no utilization of the work of Prof. H. D. Wulff, whose masterly cytological and anatomical studies (*Bot. Arkiv.* 1944: 149–189 and *Cac. and Suc. Journ.* Gt. Brit. 1948: 42–3) completely give the lie to Nel's statement that "nothing is as yet known about the anatomy, embryology, biology, development and evolution of the genus and species." Many of the stumbling blocks discusssed at length by Nel, such as the relationship of *Gibbaeum perviride* and *G. luteoviride*, had already been cleared up by Wulff, who also disentangles the two *G. haagei's* of Schwantes (in *Sukkulentenkunde III*, 1949, 55–6), mistakenly united here.

G. D. ROWLEY

"Greenhouse Flowers." Amateur Gardening Handbook, No. 5. By J. S. Dakers. (W. H. and L. Collingridge.) 3*s.* 6*d.*

For those who waver as to their capabilities of running a small greenhouse the author presents a strong case in favour, but with the word of warning, and a fair one, that a greenhouse means a daily routine. The treatment of the material is brief and concise, perhaps too much so in those sections dealing with the choice of a greenhouse and heating methods. The chapters on cultural routine and hygiene in the greenhouse are practical and useful. The latter third of the book is devoted to a list of greenhouse plants. Here more guidance would have been useful as to whether plants were intended for display either in beds or on staging, for cutting or as pot plants destined for the house or the annual border.

"Roses." Amateur Gardening Handbook, No. 6. By H. Edland. 92 pp. Illus. (W. H. & L. Collingridge.) 3*s.* 6*d.*

Mr. Edland, the Secretary of the Association of British Rose Producers, was a wise choice for a handbook on Roses, and he has written one of the most useful books which has so far appeared in this series. His information is practical and presented so graphically that with the aid of Miss C. Newsome-Taylor's competent drawings the various operations of planting, pruning, propagating and disbudding become straightforward, even for the amateur. A descriptive list of Roses must always be a personal choice but this one reflects long experience and discriminating selection.

"Greenhouse Chrysanthemums." Amateur Gardening Handbook, No. 7. By E. Morley Jones. 92 pp. Illus. (W. H. & L. Collingridge, Ltd.) 3*s.* 6*d.*

Over and above concise practical information connected with the many aspects of Chrysanthemum culture, Mr. Morley Jones has added some very good advice which should be heeded. His suggestions about keeping careful records through the years, not growing too many varieties and the emphasis on obtaining good stock should be followed. The raising of Chrysanthemums is becoming more and more a science and the amateur who follows the rules so clearly expressed here should be able to produce blooms of high quality. This book has the merit of brevity coupled with broad coverage of the subject.

"Garden Making for Amateurs." By George W. Hall. 186 pp. Illus. (Ernest Benn Ltd.) 15*s.*

Mr. Hall has written a useful book for amateurs with small gardens, either town or country. It covers a wide variety of subjects and is full of practical information for gardeners. It is too bad that the gardens depicted in the photographs were not more carefully analysed, as some of them illustrate points of garden design which are both

good and bad. Critical comment of this kind would have added to the usefulness of the book. The lack of a proper index is unfortunate, as the amateur will not only want to read this book but later to refer to it for help.

"Decorating with House Plants." By Ruth Gannon. 136 pp. Illus. (The Studio Publications, in association with Thomas Y. Crowell Co.) $5.00.

This book, published in New York, is written, as its title suggests, with a view to assisting people to decorate their homes with growing plants and does it very well. It is really a small branch of Horticulture which should be encouraged because the care and attention needed can bring a better appreciation of a plant's beauty than can be got from only cutting its flowers and often divorcing them from their natural foliage to arrange them, however well done, in, what is after all, an ephemeral display.

There are many colour illustrations, sometimes showing considerable overcrowding, and the popular names used in the States are at first quite alarming, "Rosemary Vine," "Spanish Shawl," "Shrimp Plant," etc. This, however, is soon dispelled by reference to the excellent Appendix which gives the correct botanical name for each plant mentioned and we already know that all plants that climb or creep are called "Vines" in U.S.A. There is a very pleasing picture on p. 27.

FRANK GALSWORTHY

"The Observer's Book of Common British Insects and Spiders." By E. F. Linssen and L. Hugh Newman. 127 pp. Illus. (Frederick Warne and Co. Ltd.) 5*s*.

This little book is a useful addition to the "Observer's Pocket Series." The elements of external morphology and the classification of insects are disposed of in the first few pages. Then follow the orders of insects arranged in entomological sequence; the chief distinguishing features of each order are discussed and mention is made of the more common species. A few pages have been devoted at the end of the book to spiders because of their close association with insects. It is natural in a book of this kind that more space should be given to the more prominent insects at the expense of the less conspicuous species, which, in many cases, are more numerous. The book is well illustrated containing sixty-four plates of which thirty-two are in colour. The illustrations cover more than two hundred species of Arthropods, the natural sizes of which are indicated by adjoining scales. The index includes both common and scientific names. For horticulturists this book provides a ready means of identifying many of the insects and spiders found in the garden.

V. W. FOWLER

"The Measurement of Plant Climate." By Sidney A. Searle. 36 pp. (Chichester Press, Ltd.) 1953. 4*s*. 6*d*.

In this interesting booklet the author discusses the factors affecting plant climate, that is, the climate from the lower limit of the root zone to the top of the aerial parts of the plant; and the importance of earth temperatures to the germination and growth of plants. He describes a novel plant climate thermometer, consisting of an angle earth thermometer encased in a brass sheath and provided with time scales marked with monthly and approximately weekly divisions in addition to the temperature scale. It appears that with proper use this instrument can provide the grower with much valuable information.

Not the least attractive feature of the booklet is an appendix of thirteen maps based on Meteorological Office figures, showing the average mean earth temperature for the British Isles at one foot depth under grass, and reduced to sea-level, for each month of the year. These are claimed to be the first earth temperature maps for the British Isles to be published, and they are extremely informative.

N. K. GOULD

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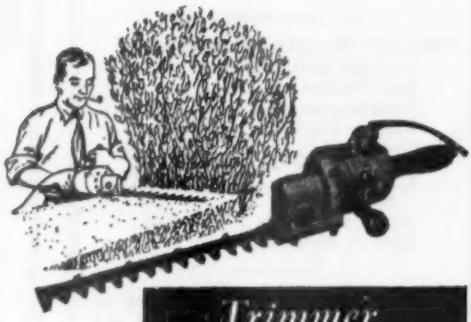
PRIDE

in their

garden!



Trimmer

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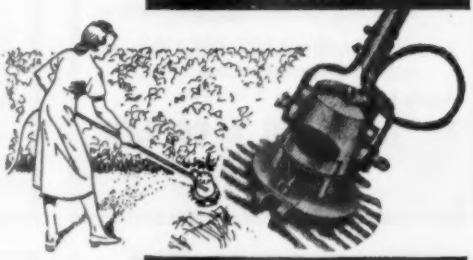

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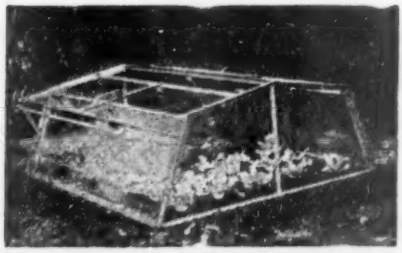

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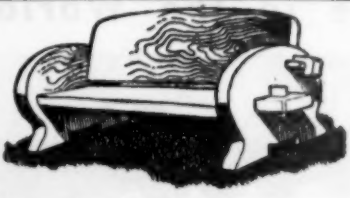

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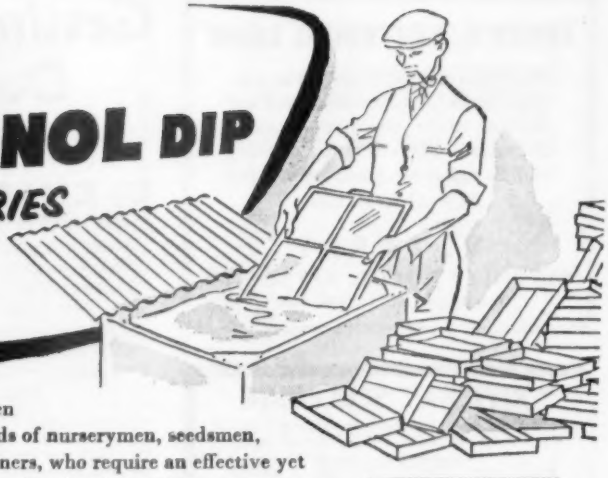

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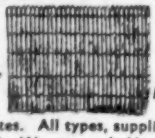

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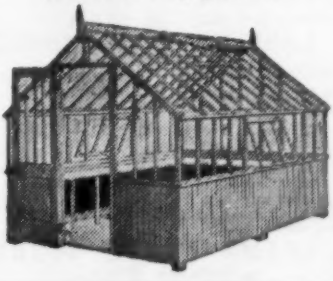

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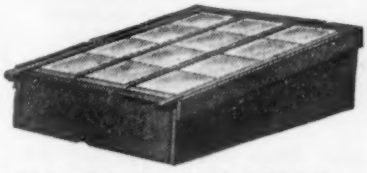

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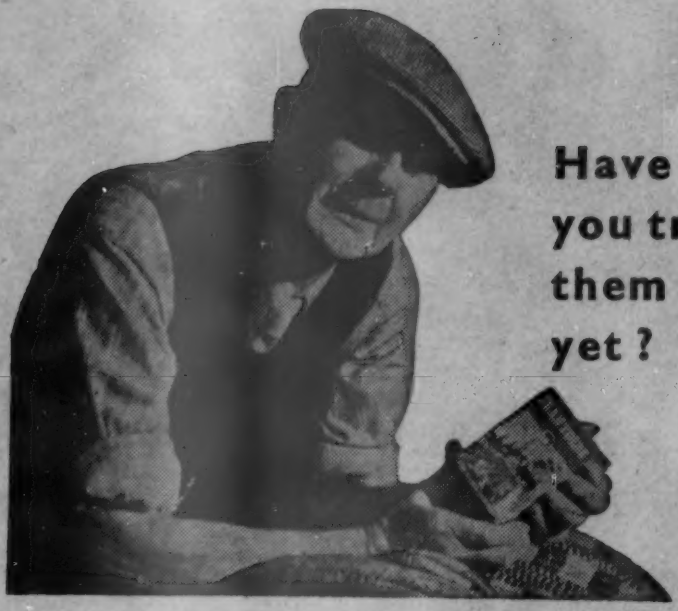

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